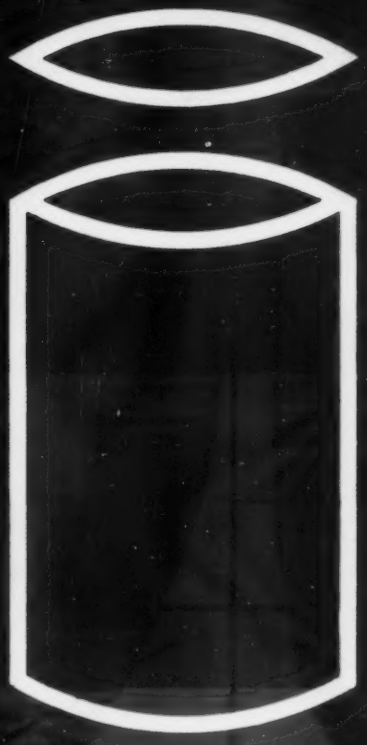
MODERN PACKAGING

AUGUST 1960



GREAT PACKAGING DISCOVERIES: *Can-sealing compounds, p. 98*

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STARDOM

FOR YOUR PRODUCT

Keeping ahead of the batter
—or your competition—
calls for constant study
and resourcefulness.

Yours, like ours, is the
never-ending task of discovering
and developing new products
and product features.

This is where winning teamwork
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and development group.

As specialists
in developing packaging
adhesives and coatings,
we have been highly
successful in helping
many of our customers achieve
a level of success for their
products that deservedly
can be called—STARDOM.

☆ *Ask for our Technical Bulletin # 340 on Polyvinylidene Chloride*

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In the United States, Canada, England and Mexico ☆ Maker of Packaging, Paper Converting and Structural Adhesives • Paper Sizes, Binders and Coatings • Textile Sizes and Finishes • Food and Industrial Starches • Synthetic Resin Emulsions and Latices • Wood Particle Boards

The YEAR before Christmas

Wrapped, ready and securely protected in VITAFILM

It's safe to do your holiday wrapping early—a *year* early, when the wrapping material is VITAFILM.

In the case of the unbreakable Christmas tree ornaments shown here, the packaging is done as many as 14 months before the contents go on sale. The reason: VITAFILM provides all the protection needed to see the goods through to the ultimate consumer.

This tough, clear Goodyear film seals to a positive welded seam. In addition to long shelf life, it withstands temperature changes, rough handling, doesn't split or run, doesn't attract dust, prints beautifully.

And it adapts readily to all types of automatic packaging machinery. Whatever your product or problem, it'll pay you to investigate VITAFILM. Superior in many ways, unique in some, it's near perfection in low-cost packaging protection. Your Goodyear Packaging Representative can give you further details, or write: Goodyear, Packaging Films Dept. T-6418, Akron 16, Ohio.

Manufactured by Bradford Novelty Company, Inc., New York, N. Y.

by **GOODYEAR**

Vitafilm, a Polyvinyl chloride—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

The best thing between you and your customer

August 1960 VOL. 33 NO. 12

IN THIS ISSUE

85 **What's happening to cellophane?**
Answer: plenty. With all the attention being given to the newer low-cost thermoplastics, the fact is that cellophane sales last year hit a record 436 million pounds—topping by more than 25% the volume for all plastic films combined. And cellophane makers are spending increasing millions of research dollars to capitalize on the film's strong points. They see cellophane being cast in a new packaging role with vast potential: that of a specialized protective material giving maximum protection to a wide variety of products.
General interest.

91 **Rigid triple-wall shipper**
Allison-Campbell achieves economical, top-notch protection for heavy industrial machinery via the adoption of a triple-wall corrugated shipper which is steel strapped to a wooden skid. The company finds that the combination also facilitates equipment handling and halves warehouse-space needs (by permitting two-tier, fork-lift stacking of the 450-lb. machines).
A production methods article.

92 **One-stop labeling and capping**
Companies seeking more efficient use of packaging-line space will be interested in an integrated machine that applies label and cap at the same time to glass bottles at Dr. Sachs Laboratories. Occupying little more space than a standard turret-type labeler alone, the new unit is reported to double the packager's drug-bottling rate at a 63% labor saving. Fast size change-over is another machine feature.
A production methods article.

94 **Economy in a plastic cup**
Plastics packaging seems ready to move in on the 1.8-billion-containers market for specialty dairy foods now packaged in heavy-duty waxed-

paperboard cups. For a line of cottage-cheese and specialty items, Borden introduces a strong, colorful, "non-commercial-look" polystyrene cup priced competitively with paperboard. The secret is a new pressure-forming technique that produces a lightweight container with walls thinner than ever before possible.
Special interest: dairy, specialty foods.

98 **Can-sealing compounds**
A *Great Packaging Discovery*. In 1919, chemist Bradley Dewey found that better control of sealing compounds and a tighter can closure could be obtained by increasing the solids-content of the gasket solution. This truly great packaging discovery assured the success of the sanitary tinplate can and paved the way for the giant food-processing business that today uses 43 billion such containers per year. Perfection of air-tight sealing also made possible pressurized and vacuum cans, the beer can and the aerosol container.
General interest.

102 **After 105 years, a new life**
The demands of modern self-selection merchandising make a memory of Richardson & Robbins' famed food label, a package face familiar to five generations of East Coast consumers. Acquired last year by the Wm. Underwood Co., the R&R line has been given a

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"No time for tranquilizers."

MODERN PACKAGING, Executive and Editorial Offices, 575 Madison Ave., New York 22, N.Y. Phone PLaza 9-2710

Please mail all correspondence, change of address notices, subscription orders, etc., to the above address. Teletype: TWX-NY 1-3063. Cable address: "Breskinpub." Quotations on bulk reprints of articles available on request.

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OF MODERN PACKAGING®

bright new label look for introduction into nationwide markets. The story of this redesign program carries a message for other "old" packagers contemplating new sales fields.
Special interest: designers, sales managers.

105 **International symbol**
In today's expanding world markets, the packaging problem of identifying, yet distinguishing, their foreign-made products is of concern to many American packagers. General Electric's solution was to develop a new trademark which expresses the company's international character while signifying that the packaged product is made by other than GE's wholly owned and operated plants.
Special interest: designers, export managers.

106 **A path to F&DA approval**
When Hercules Powder won formal Food & Drug Administration approval for polypropylene as a food-packaging material, it marked the first unqualified clearance of a "new" material under the rigorous procedure required by the Food Additives Amendment. Hercules' pioneering "clearance by specification," gained in 31 months, involved unique radiological techniques to shorten animal and chemical testing, and it overcame the test-in-food obstacle so baffling to industry. Here is a step-by-step report on an achievement of the utmost significance.
Special interest: foods, drugs, all material suppliers.

112 **When old is new**

Shulton bids to regain its prestige position in the men's-toiletries field with a new "carriage-trade" line called York Town 1781. These premium-priced products are steeped even more thoroughly in the colonial design theme than are the grooming aids which launched the company more than 20 years ago.
Special interest: toiletries, cosmetics, luxury lines.

TECHNICAL & ENGINEERING

119 **Resilient foamed polystyrene**
A new approach to the protective packaging of fragile items opens up with the development by Armstrong Cork researchers of a plastic cushioning material with shock-absorbing resiliency and flexibility previously unattainable in foamed polystyrene. The low-cost cushioning retains its springiness even at very low temperatures. And it can be cut and fabricated easily. *By T. J. Grabowski.*

126 **New scuff test for wax coatings**
This article describes a quick and simple way to achieve accurate measurement of the scuffing properties of wax coatings. Developed by Socony Mobil, its chief advantage over other methods is that abrasion is by a continually renewed surface, thus preventing molten-wax build-up on the abrading surface from interfering with test precision. Scuff is measured by determining the gain in weight of a uniform cloth strip drawn a fixed distance between two fixed samples. *By L. B. Nelson and N. L. Malakoff.*

130 **Questions and Answers**
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Modern Packaging issued monthly by Modern Packaging Corp. at Emmett St., Bristol, Conn. Modern Packaging Encyclopedia Issue published as second issue in November by Packaging Catalog Corp. at Emmett St., Bristol, Conn. Second-class postage paid at Bristol, Conn. Subscription rates (including Modern Packaging Encyclopedia Issue), payable in U. S. currency. In U. S., its possessions and Canada, 1 year $7, 2 years $12, 3 years $17; all other countries, 1 year $25, 2 years $45, 3 years $60. Single copies in U. S., its possessions and Canada, 75 cents each (Show Issue, $1; Encyclopedia Issue, $3); all other countries $2.50 (Show Issue, $3; Encyclopedia Issue $6).

HOW DO THEY STACK UP ?

By some miracle, the leaning tower of Pisa has kept standing several hundred years. But nobody should depend on a miracle to keep a leaning stack of boxes standing in a warehouse.

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How do we do it?

It's seldom easy, but we start by learning how, when and where the boxes will be used, and engineering them accordingly. By providing adequate compression strength through good design and proper material specifications. By using the best-suited manufacturing techniques, including the right types of scoring.

Being this fussy about corrugated boxes may seem strange to businessmen who have never thought much about these things. But the way your boxes "stack up" can be mighty important to your profit picture.

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Rome, Georgia

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Biglerville, Pennsylvania
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Chicago, Illinois
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Fresh is the word
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Open a packet of
Curtiss Candy Company's
Miracle Aid and
you'll find it
fresh as the day
it was packed.
Why? The package
is of laminated,
treated paper . . .
by DOBECKMUN

packages for performance

DOBECKMUN

Dobeckmun takes ordinary paper and turns it into extraordinarily fine packages for such food and beverage products as soups, hot chocolate, soft drinks and cake mixes. Dobeckmun's 32 years experience in packaging helps make this possible. And so does Dobeckmun's special talent for designing flexible packages around specific products—witness the many outstanding custom packages in use right now. Dobeckmun has scores of different packaging materials based on paper—paper laminated with film . . . paper combined with foil . . . paper treated in dozens of ways. One will be just what is needed to solve your particular packaging problem. And remember, when you call in Dobeckmun you enjoy a very special brand of packaging ingenuity and imagination. Write THE DOBECKMUN COMPANY, a Division of The Dow Chemical Company, Cleveland 1, Ohio • Berkeley 10, California • Offices in most principal cities.

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ADVENTURE in refreshment ...and clearly in view, thanks to the crystal-clear Thatcher bottle. Our Pyroglaze label, fused to the glass, can't scratch, peel or fade. Here is dependable packaging!

INVITING...there's nothing prosaic about a cleaner when it's packaged in a well-shaped, eye-inviting container. And this new Bowlene bottle is so pleasant to handle, too—a merchandising plus.

SEAL-ONS CELONS®
BY THATCHER

GUARANTEED PROTECTION
NO CAP SWITCHING
PREVENT SAMPLING
LEAKAGE IS AVOIDED
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IMPORTANT MESSAGE

See how the pace-setting "Celon" seal safeguards Kraft products. And that's not all. Celons add push to the package, too.

Send us your bottle. We'll show you what Celons can do for you, too. (No charge, of course.)

Thatcher

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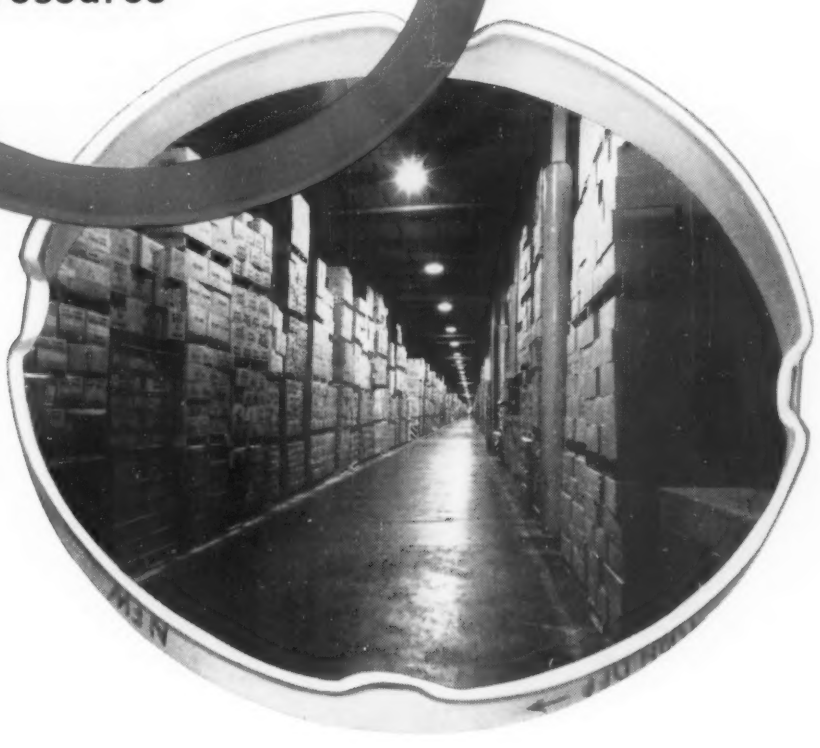
Muscatine, Iowa

McKEE DIVISION
Jeannette, Pennsylvania

PLASTIC CONTAINER DIVISION
Nashua, New Hampshire

Live rubber rings are TASK-DESIGNED to withstand stacking pressures



Task-Designed live rubber rings—an exclusive feature with Crown lug caps—protect your package against warehouse pressures. Thick, resilient rubber rings add an important safety factor, guarding product quality and assuring normal shelf life. The natural and unmatched resilience of live rubber also means you get better sealing despite minor irregularities in the glass. There are many additional advantages you get from Crown lug caps. Don't do without them! Send for details today!

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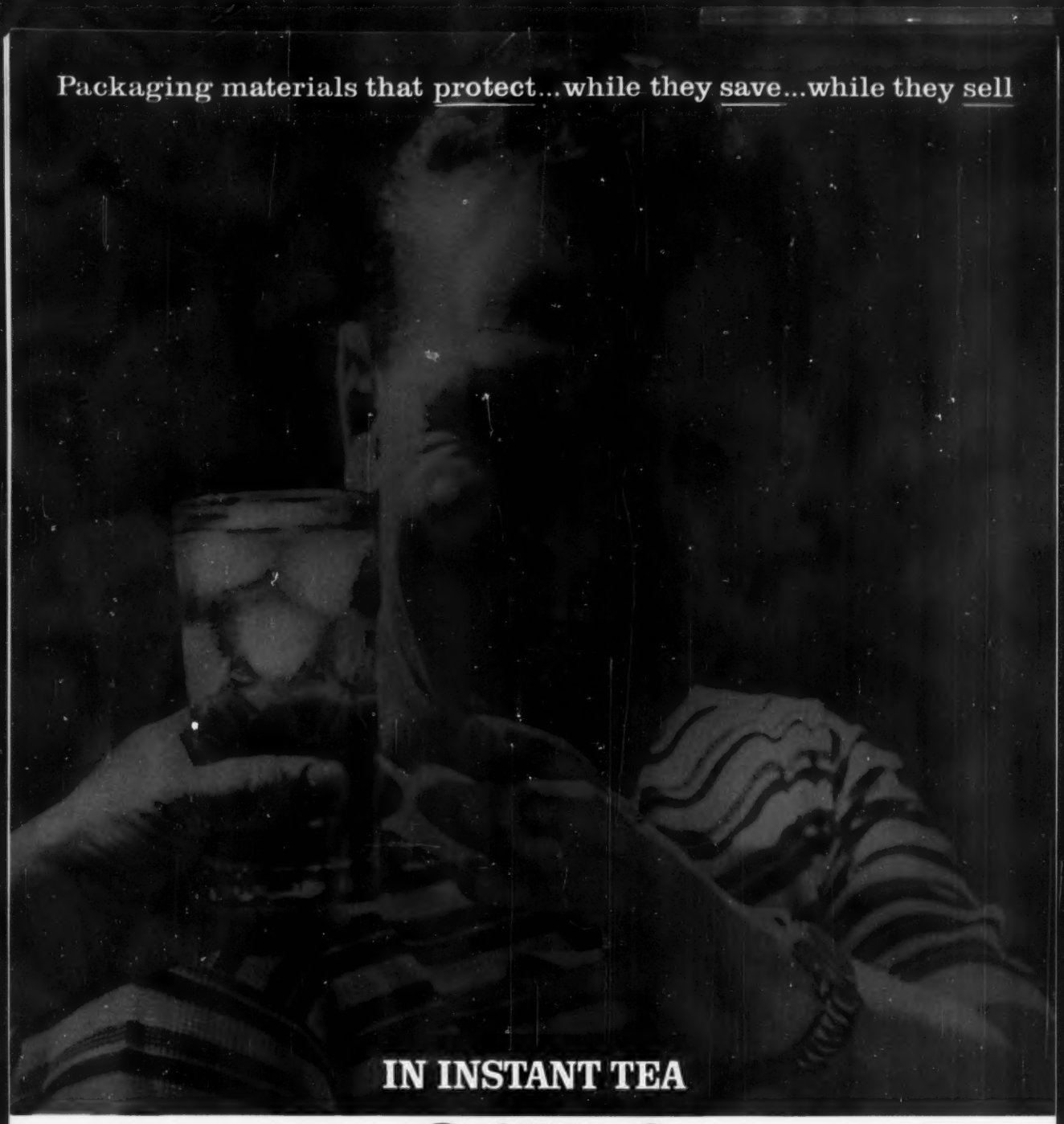
Packaging materials that protect...while they save...while they sell



IN INSTANT TEA

All six leading instant tea marketers use Riegel packaging materials regularly. Here's the reason: Their personal experience has given them faith in Riegel's technical leadership and ability to make just the right paper . . . for new products as well as old. Sales leaders in *many* fields have the same confidence. Isn't this the *best* reason why you too should talk to Riegel next time?

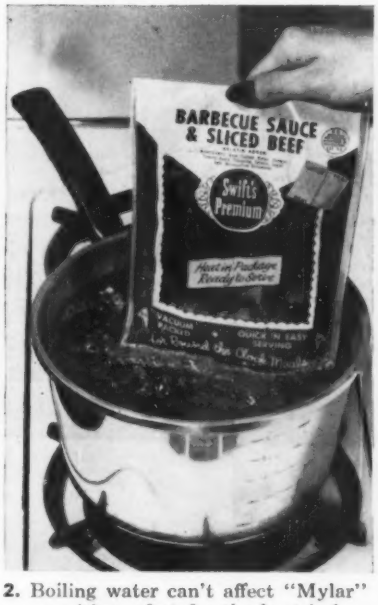
6 OUT OF 6 BUY Riegel

You've a choice of more than 600 different Riegel materials . . . standard or tailor-made . . . to achieve just the right combination of product protection, machine efficiency and low cost packaging. Pouch papers, paperboards, glassines, foils, films . . . laminated in various combinations . . . plastic-coated or waxed . . . printed or plain. Write to Riegel Paper Corporation, 260 Madison Ave., N.Y. 16.

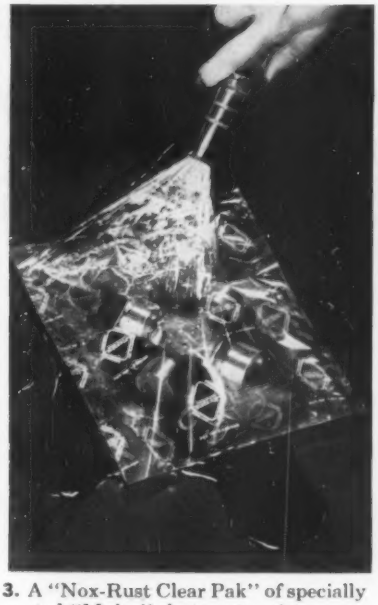
Strong, clear Du Pont "Mylar"® solves the tough packaging problems

See how combination films using "Mylar"* resist cold, moisture and heat

1. "Flav-R-Pac" corn on the cob stays fresh through freezing, shipping and handling. The vacuum pack of "Mylar" and polyethylene seals in flavor, cuts down on leakers for this Portland, Oregon company.



2. Boiling water can't affect "Mylar" . . . so it's perfect for the heat-in-bag Swift package. The pouch made of "Mylar" extrusion coated with polyethylene, also gives eye-catching, high-gloss, scuff-proof printing.



3. A "Nox-Rust Clear Pak" of specially coated "Mylar" shuts out moisture . . . keeps metal products rust-free. And "Mylar" is so tough that it won't puncture or tear . . . protects against jagged edges.

Ask your Du Pont Authorized Converter† for information about laminated or coated structures of "Mylar". He can supply these combinations as roll stock or pouches.

†For the name and address of Authorized Converters of "Mylar" write E. I. du Pont de Nemours & Co. (Inc.), Film Dept., Wilmington 98, Delaware.

*"Mylar" is Du Pont's registered trademark for its brand of polyester film.

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. . . THROUGH CHEMISTRY

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SEAL HELPS SELL!
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Only aluminum can provide a product with sheet-of-metal protection in any form from canister wrap-arounds to boilable pouches, from heat-sealed overwraps to folding cartons which now include the Mead-licensed Cluster-Pak.* Yet this versatile protection is only one part of aluminum's advantages. Using printing techniques developed by Reynolds, aluminum foil achieves an eye-catching brilliance and richness of color unmatched by any other material. Whether your product's need is protection, display—or both—call on this *Packaging Leadership.* Contact any Reynolds sales office or write to **Reynolds Metals Company,** Richmond 18, Virginia.

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Durkee's new container for black pepper features:

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Easy-grip size
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Waterproof foil wrapper
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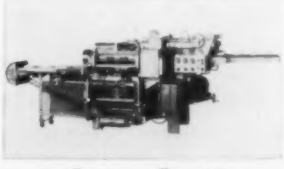
If your daily packaging includes at least 20000 overwraps



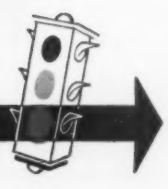
...Battle Creek Machines can probably wrap them better, faster,

more economically than any other

Periodic re-orders of the Model 43 by satisfied customers mirror its unique versatility, efficiency and reliability. Products are not just wrapped . . . they are transformed into individual merchandise "show-cases". At speeds of 45 to 75 per minute, the Model 43 overwraps in printed or unprinted cellophane such diverse items as loose cookies, small baked goods, iced cakes, pre-packaged meats, textile articles, envelopes and clothespins. Utilizes either an underneath or end fold, and the product size range is 3" to 10" lengths, 1¼" to 4½" widths and ½" to 4" heights. Write for details today!

Continuous Flow® PACKAGING

BATTLE CREEK *packaging machines, inc.*, BATTLE CREEK, MICH



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'the experience of the M.D. craftsman is necessary!

M.D. GOLD BRONZE POWDERS ARE SPECIALLY FORMULATED TO FIT PARTICULAR JOB REQUIREMENTS.

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Specify the single polyethyl

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It's Du Pont's exclusive 2-IN-1 polyethylene

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- How tough is it? Du Pont's new 2-in-1 polyethylene film offers a toughness matched only by hazy, high-impact polyethylene.

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-clear

tough!

film designed specifically for bag packaging

This means you no longer have to sacrifice clarity for durability when specifying a polyethylene bag film!

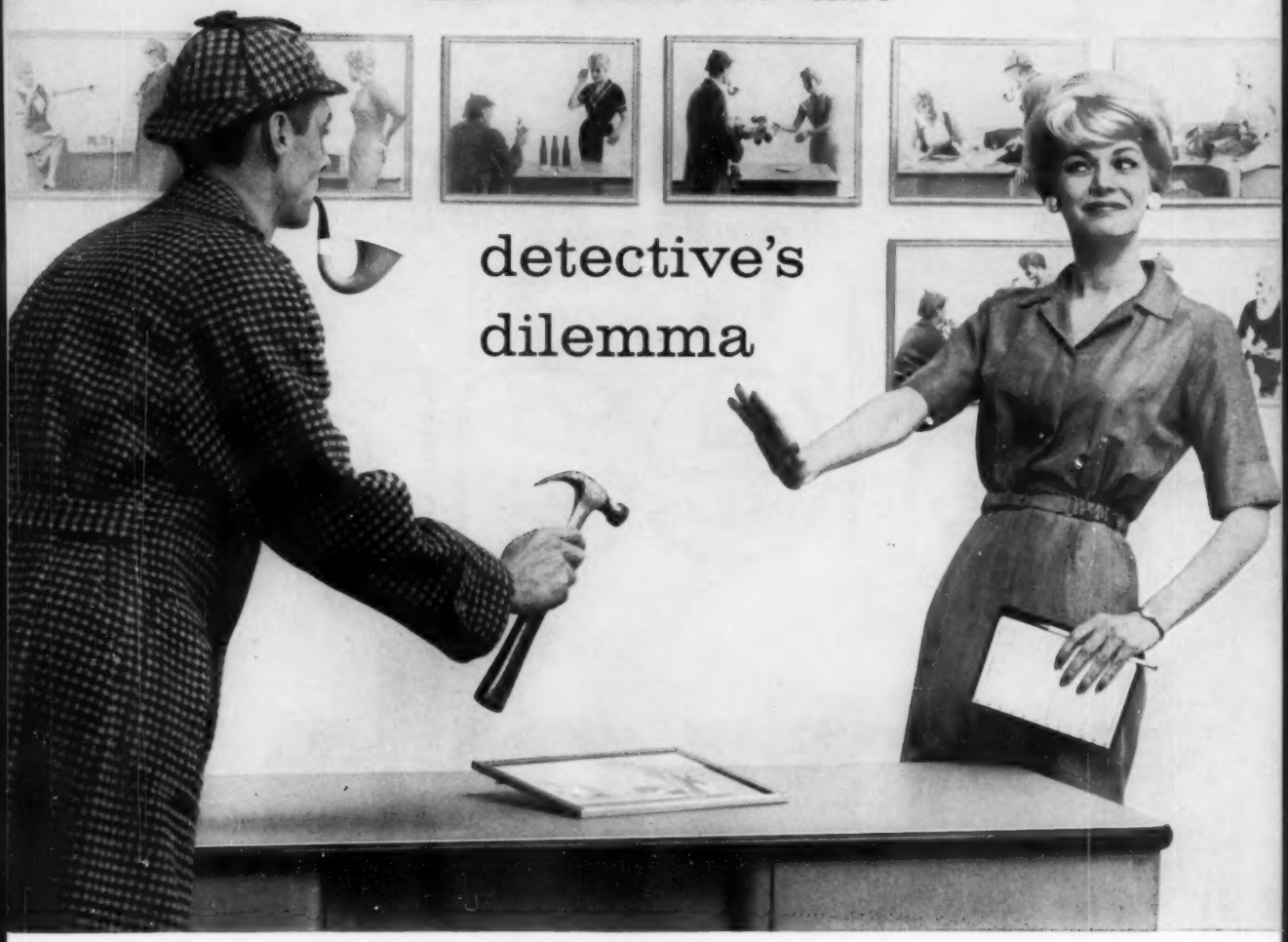
Du Pont 2-in-1 polyethylene film is now available in printed roll stock and bags through Du Pont Authorized Converters . . . or plain roll stock from your Du Pont Representative. Call an Authorized Converter or Du Pont Representative for all the facts on this latest advance from Du Pont . . . leader in packaging film for 35 years. Du Pont Company, Film Dept., Wilmington 98, Del.

DU PONT
REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

DU PONT polyethylene film

The case of the detective's dilemma



MISS WATSON: Put down that hammer, Fearless, I'll get your correspondence typed.

FEARLESS FULLER: Fear not, Miss Watson, I was just going to hang up another memento of one of my recent cases.

MISS WATSON: Hmmmm. Other offices have wall-to-wall carpeting. We have wall-to-wall pictures.

FEARLESS FULLER: Well, a man must have his memories, you know.

MISS WATSON: I guess that's right. And I imagine you must have some fascinating ones.

FEARLESS FULLER: Yes, when you make as many adhesives as Fuller does, you get into solving a wide variety of cases.

MISS WATSON: And I imagine, when you run into a particularly tough problem, you must thank your lucky stars you have such a skilled adhesive laboratory team to help you out.

FEARLESS FULLER: How true. Sometimes it's almost a mystery to me how fast we come up with precise solutions.

MISS WATSON: I suppose. But tell me, Fearless, what was your most interesting case?

FEARLESS FULLER: My most interesting case, Miss Watson, is always the *next* one.

MISS WATSON: You mean, the challenge of the problem is what makes it interesting.

FEARLESS FULLER: That's right.

MISS WATSON: Well, speaking of problems, Fearless, I have one right now.

FEARLESS FULLER: What's that, Miss Watson?

MISS WATSON: Trying to remember where I put the tacks you hang up the pictures with.

FEARLESS FULLER: Well, we can always use Fuller's glue. As I always say, there are very few problems a Fuller man can't solve.

Your Fuller man is ready with the correct solutions on any adhesive problems for you, too. Contact your nearby plant.

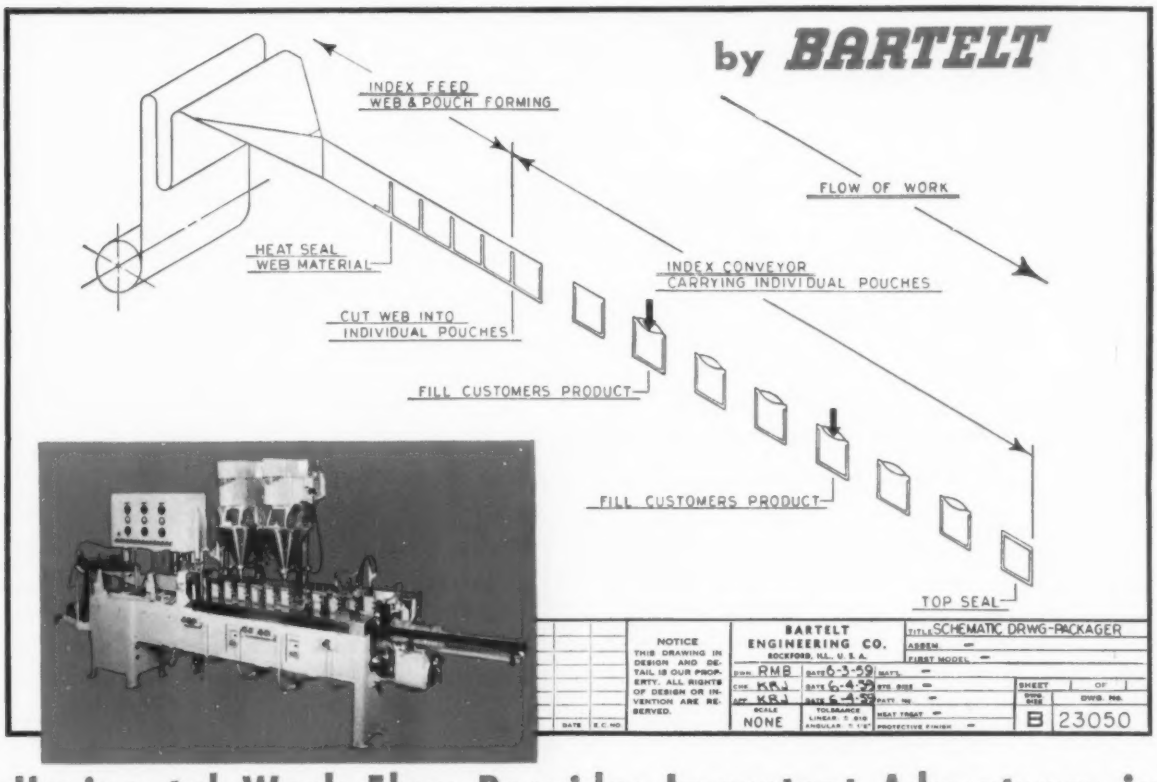
H. B. Fuller Co.

INDUSTRIAL ADHESIVES

St. Paul, Minnesota

St. Paul, Minn. • Atlanta, Ga. • Buffalo, N.Y. • Chicago, Ill. • Cincinnati, Ohio Dallas, Tex. • Kansas City, Mo. • Linden, N. J. • Los Angeles, Calif. • Memphis, Tenn. • Portland, Ore. • So. San Francisco, Calif. • Tampa, Fla. Also Winnipeg, Can. • Fuller Adhesives International, Nassau, Bahamas

DESIGN FOR SUPERIOR FLEXIBLE PACKAGING!



Horizontal Work Flow Provides Important Advantages in Fabricating High Strength Flexible Pouches...

Study the drawing above and the points listed below. *No other flexible packaging machine can provide you an operation with all these important advantages!*

1. Forming of the web is *completed* prior to bottom and side sealing. Thus, no forming stress interferes with proper sealing . . . no built in pleats or tucks occur and superior seals are assured.

2. Side and bottom seals are *set* before cut-off, pouch opening, or filling takes place . . . Seals cannot be weakened by product contamination, or stress caused by cutting, opening or filling while seals are hot and plastic.

3. Filling takes place in a station designed for filling only. Thus, product contamination of cut-off knives, seal bars or other tooling is negligible. The only thing below the fill station is the stainless steel dust cover and spill chute.

4. There are several stations available for the application of special tooling: cooling bars, perforating blades, partition seal bars, top fold mechanisms, tear string and saddle label applicators, die cutting tools as well as special filling devices.

5. Top sealing also takes place in a position of its own, well removed from the filling operation to avoid seal contamination. The preceding few stations are free and available for paddling and pouch stretching so that the pouch is presented flat and ready for an undistorted top seal.

6. This logical and practical sequence approach means that each operation not only has its own position, but its own mechanism designed for one operation only. The absence of complex double or triple duty mechanisms substantially reduces maintenance problems and costs while it increases operation efficiency.

WHERE UNFAILING QUALITY COUNTS!

BARTELT ENGINEERING COMPANY

1900 HARRISON AVE., ROCKFORD, ILLINOIS • NEW YORK, 370 LEXINGTON AVE., N.Y.C.

(Advertisement)

FDA Approves Pro-fax® for Food Packaging Use

Pro-fax polypropylene has been approved by the Food and Drug Administration for use in products coming into direct contact with all kinds of foods. The formal regulation authorizing the use of Pro-fax 6420 (for film) and Pro-fax 6513 (for injection-molding and general purpose extrusion) in food packaging appeared in the Federal Register on Saturday, April 16, 1960. Pro-fax thus becomes the first packaging material to win approval through the issuance of a formal Food Additives regulation.

This action clears the way for you to immediately utilize the many advantages of Pro-fax in such uses as packaging films, rigid containers, closures, coatings, liners, and dispensers for food handling.

The petition submitted by Hercules in winning acceptance for Pro-fax is looked upon by the industry as a model because for the first time it establishes a *legal specification* for a food packaging material. It is therefore expected to serve as a guide to producers of other packaging materials seeking FDA approval for their products. It represented a unique effort by a closely knit management team, which included personnel in Product Development, experts in the Hercules Medical and Legal Departments, and research specialists in analytical chemistry and testing techniques.

Once more Hercules leads the way in the development, production and marketing of polypropylene. Pro-fax, America's first polypropylene, is first with FDA approval. The formal regulation was issued as a result of FDA's evaluation of Pro-fax data submitted in the Hercules petition. The regulation sets out the legal specifications for polypropylene in contact with food. You eliminate all doubts and play safe when you design your new food packaging requirements around Pro-fax, because there can be no question that Pro-fax is covered by the FDA order.

Pro-fax is a superior, low-cost container and barrier material. Pro-fax films combine exceptional strength with excellent clarity, resistance to heat, chemicals, and moisture. They are adaptable to hot-filling, are heat-sealable, highly resistant to fatty foods, and can be sterilized safely at temperatures up to 275°F. Pro-fax, both in film and injection-molded form, is already widely used in packaging in a variety of non-food applications.

Only Pro-fax is both *proved* and *approved*. Specify Pro-fax *now* for your food packaging requirements. We'll be glad to help with your product planning. Call or write:

HERCULES POWDER COMPANY
INCORPORATED
Wilmington 99, Delaware

CP60-10

NEW FACE IN THE SMITH FAMILY

TRADE
MARK
MEDICATED
COUGH CONCENTRATE
A Central-Acting Syrup for Symptomatic Control of Coughs Due to Colds or Minor Throat Irritations

PACKAGE DESIGNED BY ELMO ANDERSON ASSOCIATES

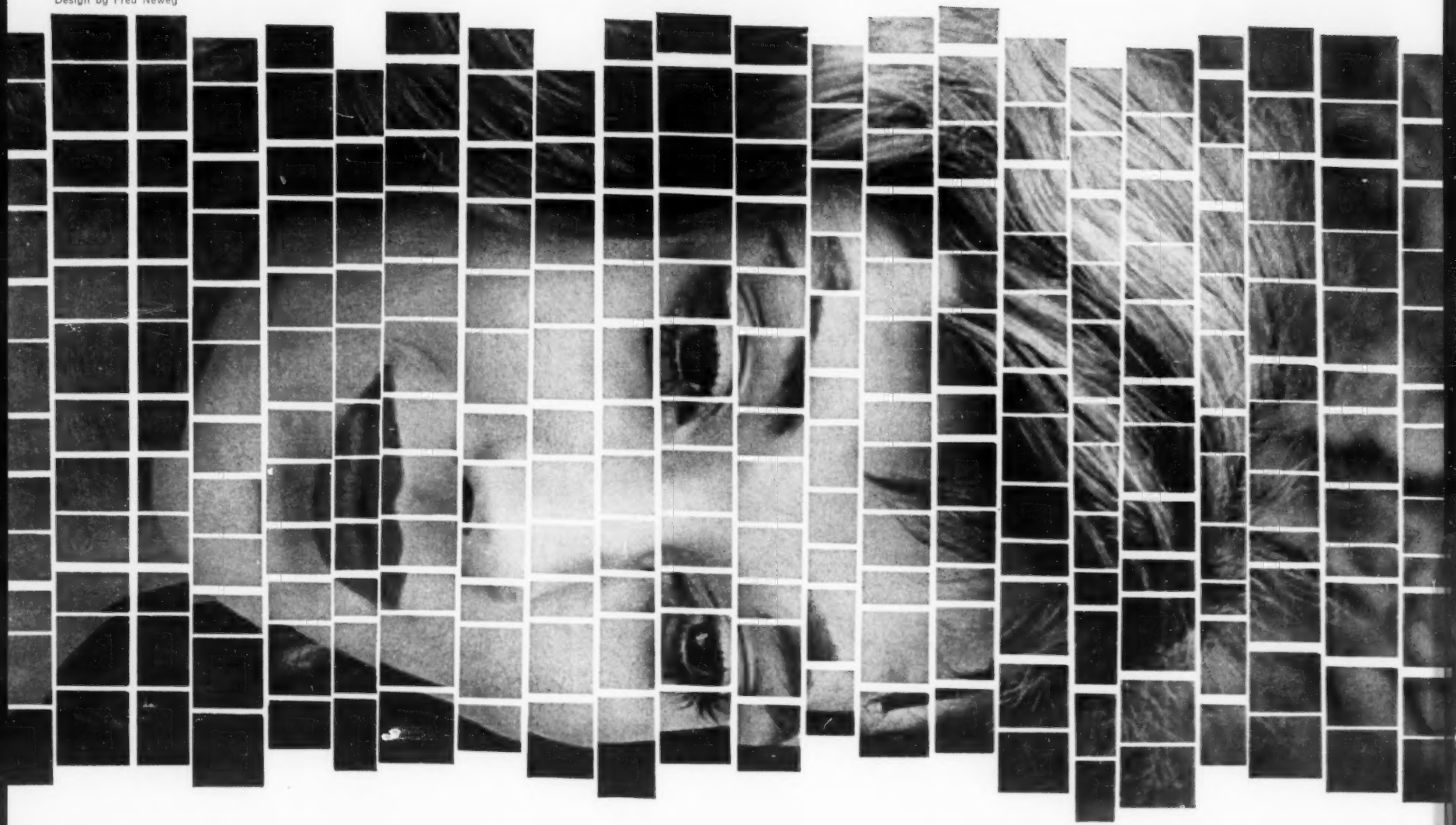
Behind the respected name of Smith Brothers lies alert marketing judgment. To gain a competitive edge, this company—like so many others—turned to Plax for colorful, unbreakable containers of plastic. • Result: a truly consumer-oriented package—graceful, functional, pleasant to the touch. In addition, the medicinal qualities of the product it holds are protected by a lining available only in Plax bottles. This is why so many leading manufacturers rely on Plax for dramatic packaging that moves merchandise. • To serve a growing demand, we provide the largest manufacturing capacity in the industry. This, together with twenty-five years of experience, makes Plax the leader in its field. • Let us demonstrate how low-cost plastic packaging can build your sales and profits.

Plax Corporation, Hartford, Conn. • In Canada, Plax Canada Ltd., Toronto

PLAX 25TH anniversary

PLAX GIVES A PACKAGE A PLUS

Design by Fred Newey



Patterns in Packaging / There is something different about packaging by Bradley-Sun... something which prompts a discriminating firm to select *several* refreshing tubes from our varied selection.

The soft allure of polyethylene enhances the sale... endears the product through the entire period of use. When your product is packaged by Bradley-Sun, charm *and* convenience go hand in hand. Let us tell you more about these merchandising advantages.

The package is your product at the point-of-sale!

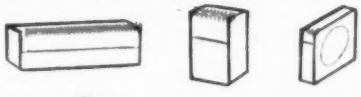
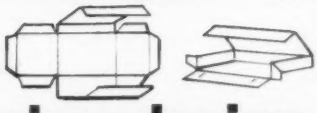
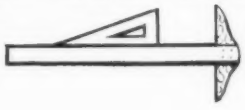
BRADLEY Sun

Division of ***American Can Company****, Hillside, New Jersey* / *Sun Tube of Canada, Ltd. Ottawa, Ontario*

A CROWELL CUTTER CARTON GIVES YOU THE "EDGE" ON COMPETITION

How big is your product... bigger than a bread-box? **How big are your sales... like a best-seller?** **Crowell has facilities for making metal-edge cartons from ½" to 36" long!**

And Crowell has the know-how to create sales-appealing package designs. Ask Alcoa **Mystik Tape** **K.V.P.** **and others. They've found our handy self-dispenser** **cartons build brand identification and repeat sales.** $$$$$$

MORAL: call Crowell... specialists in cutter cartons  **and folding boxes**  **for years. Our complete packaging design services**  **are at your service.**

Crowell offers complete packaging services for folding cartons . . . metal-edge dispensers . . . METLSTAY packaging.

CROWELL CARTON COMPANY · MARSHALL, MICHIGAN · division of St.Regis PAPER COMPANY

Escon® POLYPROPYLENE

solves the case of the missing slice!

Here's another interesting use of versatile Escon! As sparkling clear film for bread wrap, Escon exhibits exceptional non-relaxing properties and retains its texture and shape. It doesn't become limp and saggy after repeated customer handling, or give an impression that one or more slices are missing as can be the case with other thermoplastic films. Escon can match or exceed the high speed output of any film on machines designed for polyolefins. In addition, it can simultaneously be heat sealed in multiple folds. Other properties of film made of Escon include superior moisture barrier that contributes to longer shelf life; controllable shrinkage; color printing and high surface gloss for extra eye-and-buy appeal. Escon can help produce better packaging film as well as benefit other plastic processors in many ways. Investigate Escon polypropylene today! Contact the nearest Enjay office.

EXCITING NEW PRODUCTS THROUGH PETRO-CHEMISTRY

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A DIVISION OF HUMBLE OIL & REFINING COMPANY

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ENJAY
PLASTICS

On this page...

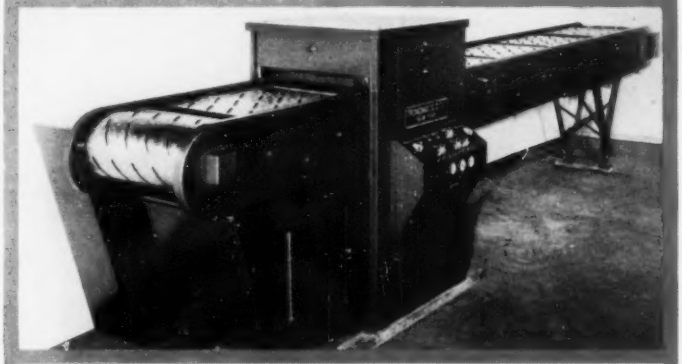
6 new ways to make a good packaging set-up a better one

Can Tronomatic and Tronomatic equipment help you solve a costly packaging problem... make a good packaging set-up a better one? Our new plant and demonstration laboratory is at your service. Write today or, better yet, drop in if you're in the vicinity.

NEW ***BlisTPack HEAT SEALER*** seals through card, protecting product and plastic blister... lets you seal up to card and blister edges. A new process that cuts sealing time to as little as two seconds. Flat steel master tray minimizes chance of warpage or improper sealing, takes punishment that deforms web materials used in conventional sealers. Fast, simple changeover. Conveyorized automatic unit or efficient manual model.

NEW ***DIE CUTTER*** handles all thermoplastic materials... provides up to 20" of "daylight," more than 6" of stroke. Unique air-hydraulic power head rated at over 50 tons delivers pressure and speed desired, eliminates maintenance problems of pure hydraulic systems. Spring-loaded shuttle table permits outside loading. Mechanical in-press stop and heated platen increase die life and make special applications possible. Advanced safety and timing controls. Cutting areas: 24" x 36", 30" x 50", 40" x 60" and 49" x 73"

NEW ***FLANGE FORMER*** moves 80" to 400" per minute, makes 90° or 180° folds on any commonly used thermoplastic. Variable speed drive and positive dual thermostatic heat control assure smooth folding, whatever the speed. Edge being formed is heated, top or bottom, at all stages through forming die. Will fold parts up to 14" wide.



NEW ***PRESSURE FORMERS.*** Unique among pressure-forming machines, these Tronomatic models work with all thermoplastic materials. Production speed up to 20 cyc./min. in automated operations. Air-hydraulic power head delivers instant, high-speed force. No need for special plumbing, no "hydraulic" problems. 12" x 22", 24" x 30" and 20" x 24" models, with Tronomatic indexing and trimming equipment optional on the first two and "standard" on the third.

NEW ***VACUUM FORMERS*** combine with other Tronomatic machines in automated operations to let you do everything from forming to heat sealing to trimming to stacking finished parts. Standard models: 30" x 30", for skin packaging... single-station machines from 11" x 22" to 48" x 72"... advanced rotary units. Custom-tailored equipment also available.

NEW ***EXPANDABLE POLYSTYRENE MOLDER*** delivers up to 16" stroke, handles parts up to 40" high. Special mold mounting permits full use of "daylight," speeds loading, eliminates hazards of working "in the press." Connections to air, water and steam only ones needed. Five platen areas available, from 24" x 36" to 49" x 73". Can be fully automated, if desired.

TRONOMATIC MACHINE MANUFACTURING CORP.

25 Bruckner Blvd., New York 54, N. Y. • MO 5-4600

Manufacturers of plastic forming, molding, fabricating, sealing and cutting equipment

It's the Ink that attracts...

IDENTIFY and BEAUTIFY with

PRINTING INKS can help your product, package or promotion be the *King pin* in all your selling efforts. That's why it's so important to use the *right* printing inks—right in color, right in quality, right in cost and right in *performance*. Inks that are outstanding, both on the press and on the end product. Let GPI help you to attract and *hold* customers. Simply call or write.

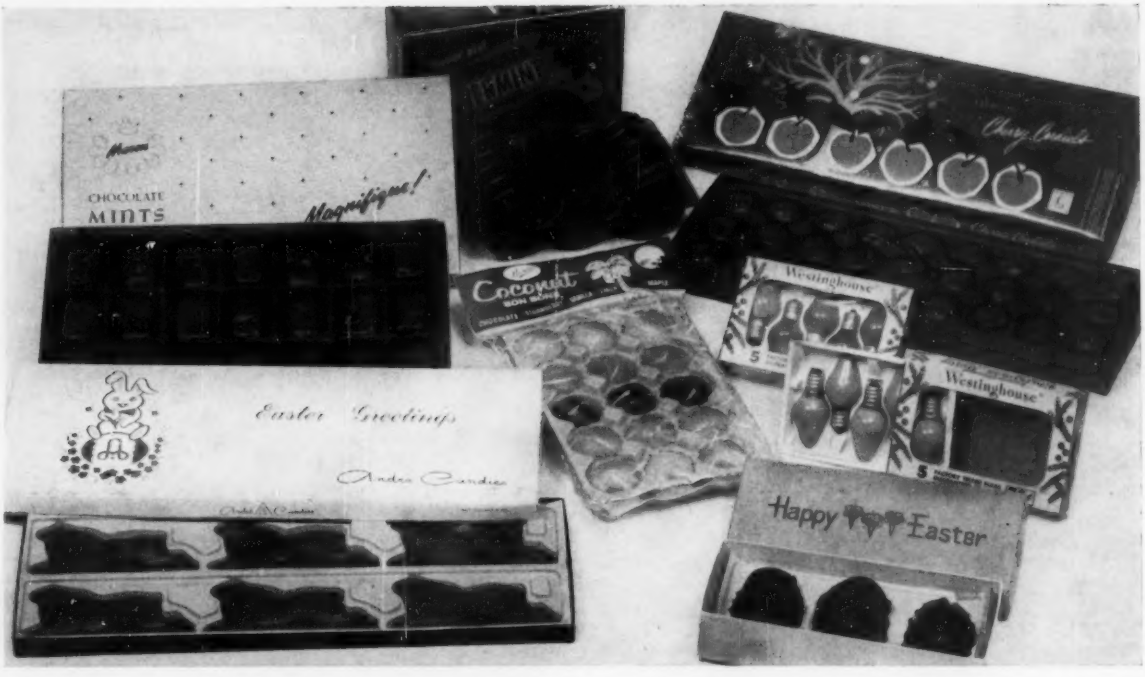
Branches in all principal cities

GENERAL PRINTING INK

DIVISION

Sun Chemical Corporation

750 Third Avenue, New York 17, N. Y.



IF IT CAN BREAK, BRUISE, CRUSH OR SCRATCH—PANTA-PAK IT!

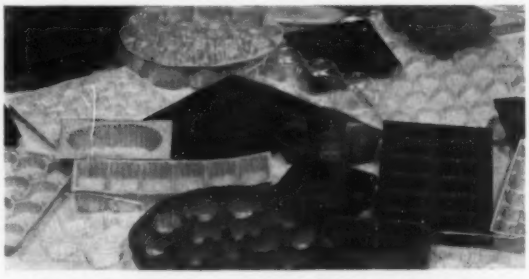
Low-Cost PANTA-PAK custom-formed packaging delivers your product in perfect condition.

PANTA-PAK plastic containers are molded to the exact contours of your product. They cradle it. Hold it gently, but *firmly*. Because PANTA-PAK material can be varied from tissue-thin to extra thick—*within the same unit*—your product gets soft cushioning or rigid strength exactly where it's needed most.

PANTA-PAK is *economical*. Your labor costs are lower because it fills faster, handles easier. Better protection reduces your product losses. And you save on freight costs, too, because PANTA-PAK is lightweight.

PANTA-PAK can be made as an interior tray or as a completely self-contained package. Five lively colors add eye-appeal—make striking point-of-sale displays. And the smooth, sleek contours of PANTA-PAK give your packaging a *quality* look. F.D.A. approved, too!

For free samples and further details, write PANTA-PAK Division, Pantasote Co.



PANTA-PAK can be custom-molded to fit almost any product—holds it gently, yet firmly.

panta-pak®

DIVISION OF THE PANTASOTE COMPANY

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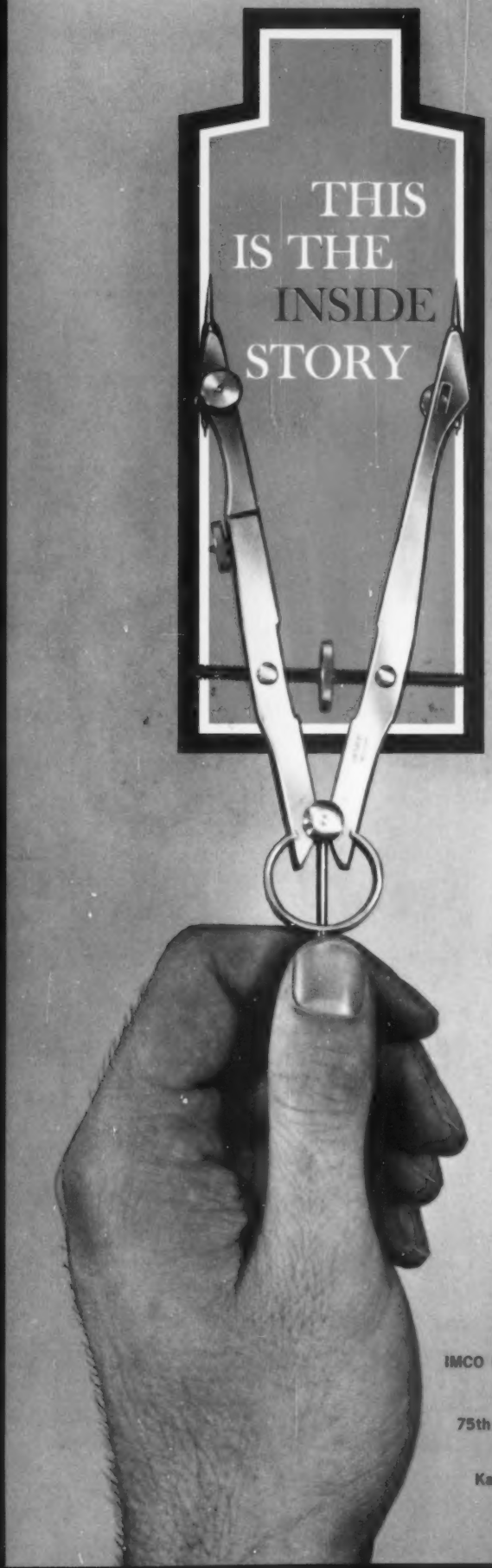

. . . of an IMCO container. More specifically, it's the inside story of the neck of that container. The order specified exact coring dimensions so the plug wouldn't pop out. IMCO matched those dimensions. The order specified exact thread dimensions so the cap would fit snugly, stopping leaks. IMCO matched those dimensions. ■ All the specifications, for wall thickness, capacity, weight and color, were matched by IMCO. The same can be done for you, regardless of the size of your order. This attention to detail means that IMCO polyethylene containers have an unquestioned look and feel of quality reproduction. Yet these containers are just one fifth the weight of comparable glass containers, to reduce shipping and packaging costs. ■ Get the complete story about putting your product inside a quality-made IMCO polyethylene container. Contact your nearest IMCO representative today for all the details.

IMCO Container Corporation,

75th and Cleveland Streets,

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IMCO

Manufacturing Plants:
Belvidere, New Jersey
Toronto, Ontario, Canada
Excelsior Springs, Missouri
Harrisonburg, Virginia

Sales Offices:
New York, New York
Chicago, Illinois
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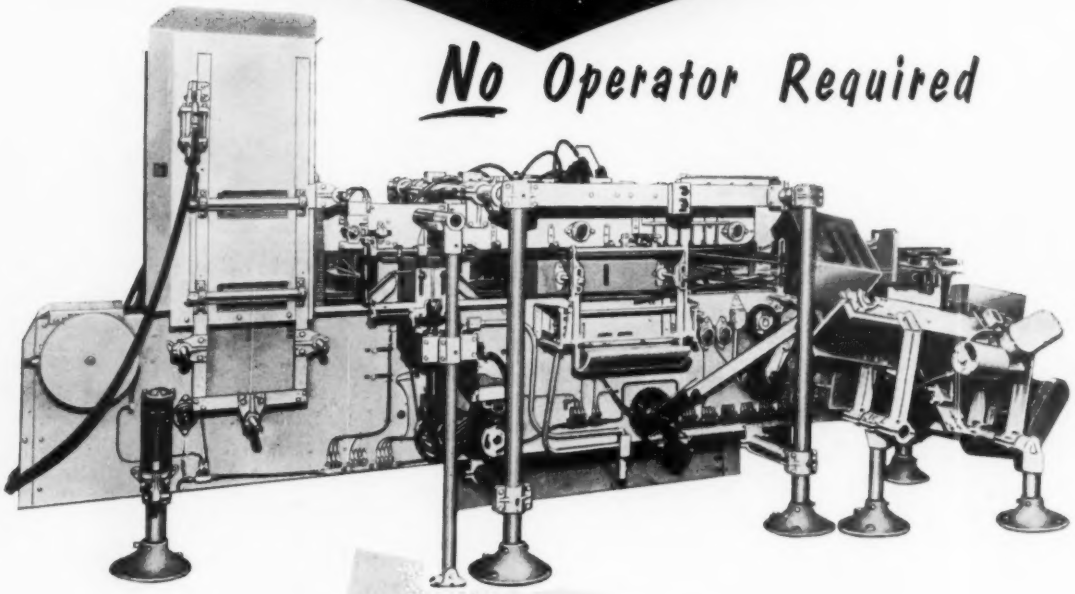
Toronto, Ontario, Canada
Memphis, Tennessee

...for high speed handling

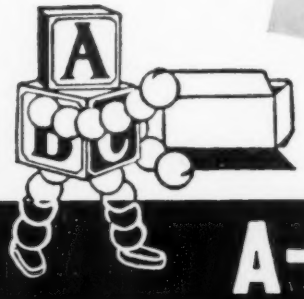
A-B-C *Automatic* CASE OPENER POSITIONER and PACKER

No Operator Required



This high speed case opener and packer can be made adjustable. Up to 25 CASES per MINUTE. End loading, side loading or top loading cases. Positive automatic feed, handling all types of cases, stapled, glued or stitched. Does not require special shipping cases or tolerances. Will run standard mill shipments of corrugated boxes. Automatic accumulation of a wide variety of carton loading patterns.

Whatever your packaging problem there's an A-B-C MACHINE to solve it



WRITE TODAY FOR DETAILS — FLOOR PLANS and SPECS

A-B-C PACKAGING MACHINE CORP.
TARPON SPRINGS, FLORIDA

INTERNATIONAL PAPER—The Ultimate Source

This box tells an amazing story—inside and out

(More packaging news from International Paper)

Read how a bright printing surface and light-colored interior are combined in IPX* Board.

Now, International Paper has developed an economical packaging board to meet the challenge of today's mass marketing.

Over 2½ years ago, our skilled craftsmen went to work. First, they developed a new papermaking technique to blend two different pulps into one. Fine bleached sulphate pulps and inexpensive groundwood pulps. The result—IPX. A machine clay-coated board with a bright surface and light-colored interior.

Next, they subjected IPX Board's smooth, bright surface to printing, varnishing and lacquering tests. It printed beautifully. Varnish and lacquer coatings retained lasting color brilliance and uniformity.

Today, quality printing (up to 175-line screens) on IPX results in packages that practically *sell on sight*.

At International Paper's research centers and 16 mills, experimental papermaking processes and packaging innovations, such as IPX Board, are in continual development.

That is why International Paper can provide you with the widest range of papers, boards and packaging assistance in the industry. Call us or contact your converter—he's probably been doing business with us for years. *T.M.

INTERNATIONAL PAPER New York 17, N. Y.

Manufacturers of papers for magazines; books and newspapers • papers for home and office use • converting papers • papers and paperboards for packaging • shipping containers • folding cartons • milk containers • multiwall bags • grocery and specialty bags and sacks • pulps for industry • lumber, plywood and other building materials

Magician at work

Nothing like a youngster to make a product disappear . . . *if* he gets the chance.
Whether he does, of course, depends on Mom. She's the one who picks it off the shelf . . . *if* it catches her eye. This one did. A mighty handsome jar, the tall shape tells her it's a lot for the money. A glance shows it's easy to hold and spoon from . . . as any youngster will promptly demonstrate. Smart designs that move the product are a specialty at Armstrong Cork Company, Lancaster, Pa.

Armstrong PACKAGING

1860-1960 Beginning our second century of progress

WATCH ARMSTRONG CIRCLE THEATRE EVERY OTHER WEDNESDAY EVENING ON CBS-TV

Background for Packaging

Packaging will double in the next 10 years, says *Standard & Poor's.* The business advisory service places the expenditure on packaging last year at $16 billion (which jibes very closely with this magazine's figures) and predicts the volume will be $32 billion by 1970. The sales rise, Standard & Poor's says, will be stimulated by such factors as the increased demand for convenience packaging, particularly in foods, and by manufacturers' continuing attempts to reduce transportation costs, product handling and warehouse space.

Battle for space on the supermarket shelf is waxing into a hot war. All packagers selling to this market (which means practically all packagers) should take note. There is open talk of a "rental charge" for shelf space—so much per foot for each product. *Background:* A jurisdictional victory by retail-clerks union, giving them right to stock shelves instead of salesmen; stores say this will increase their labor costs, and some baby-food lines reportedly have already offered to pay stores 10 cents a case as "stocking cost."

There's growing interest in oriented shrinkable films (polyethylene, polyvinylidene chloride, polypropylene, polystyrene, PVC) with sufficient strength to serve as a cheap means of banding a number of units together for multi-unit sale. Recent tests have proved the practicability of the shrink-wrap multipack for baby foods—even for bottles as large as 16 oz. Cans can be easily packed in groups with shrinkable polyethylene, with no loss of package visibility.

Significant news is *AviSun's* announcement of a 13% price cut on polypropylene film with volume production barely begun. The new price for 10,000-lb. quantities (2.25 cents/1,000 sq. in. for 1-mil film) is only a shade above that of the lowest-priced polyethylene (1.9 cents) and is below that of polystyrene film (2.4 cents). This, with the positive F&DA clearance of polypropylene as a food-packaging material (see p. 106, this issue), seems to establish the new film as a serious contender in the packaging field.

Cigarette men still scramble for packaging gimmicks, trying to get a conversation piece as valuable as Marlboro's first flip-top box. The old idea of the "self-lighting" cigarette—with a coating on the tip that would ignite when scratched along the side of the package—has recently been considered by one medium-size brand. But the company denies it will be adopted, even though ad copy is known to have been prepared.

Wide disparity between advertising and packaging expenditure for market testing is pointed out by *Albert Kner,* design director of *Container Corp. of America.* More than $120 million is spent annually in researching and testing the effectiveness of advertising, says Kner, but only $10-million is devoted to testing the final payoff of advertising, which is the reaction to the package at the moment of purchase decision.

Big step forward in the automatic vending of packaged goods is a giant machine, first installed at *Macy's,* New York, which accepts and makes change for paper currency from $1 to $5 and carries a stock of 683 packaged soft-goods items, such as men's undershirts and shorts, which sell for 97 cents. Operated by an electronic computer, the machine automatically rejects counterfeit bills. The ma- [*Continued on page 40*]

Win
a woman's
hand . . . . . .
Secret
ROLL-ON DEODORANT
GLEEM
GLEEM
tooth paste
WITH
GL-70
PROCTER & GAMBLE
Crest
TOOTH PASTE
with fluoristan

. . . . . with the aid of

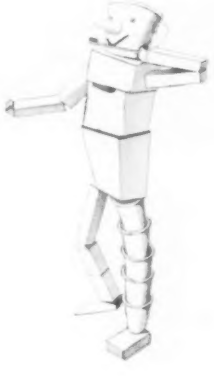
BRITE-PAK ENAMEL COAT

Secret—Gleem—Crest . . . nationally famous products of Procter & Gamble . . . have successfully won acceptance by women. Attractive packaging helped, of course, and West Virginia's Brite-Pak Enamel Coat is a bleached board used in all three.

Snow-white on both sides and all the way through, Brite-Pak Enamel Coat is made of 100% virgin pulp, and gives these sparkling cartons a more sanitary and inviting look than old-fashioned containers that have drab interiors next to the product.

Brite-Pak Enamel Coat takes full color process printing brilliantly, gives beautiful product illustrations, yet is remarkably economical.

You'll find Brite-Pak Enamel Coat an excellent choice for colorful, appealing packages . . . the modern way to *upgrade* your packaging. Write to Bleached Board Division, West Virginia Pulp and Paper Co., 230 Park Avenue, New York 17, N. Y.



West Virginia Pulp and Paper

chine is, of course, adaptable to hundreds of other packaged products, and its big future is seen as a street-front after-hours merchandiser, where lack of change-making facilities has so far been a handicap.

Serious study of plastic containers is being made by motor-oil industry. Questions now concern the narrow-neck style of single-use bottle, made of plastic sheet, versus a construction which would more nearly duplicate the cylindrical can. The latter shape would have the virtue of fast filling on present equipment. There is also a debate over suitable plastic materials, with increased attention being given to polypropylene.

Watch developments in water-soluble films. New film formulations and machine improvements are making the dissolving package steadily more practical for such things as detergents, bleaches, agricultural chemicals, inks, paints—and perhaps foods someday. In addition to the methyl-cellulose and polyvinyl-alcohol films, there is interest in a water-soluble film made from polyethylene-oxide resins.

Look at all angles when you consider the package as a selling tool. A dozen major oil companies have adopted the idea of printing on the bottoms of motor-oil cans—viewed by the filling station attendant for several seconds as he tips the can over the oil fill pipe—such varied sales suggestions as: "Ask: Check your anti-freeze?" or "Did you ask for a lubrication?" or simply "Smile—customers like it!" Idea, credited to *American Can Co.*, has possibilities for other product fields.

[*Continued from page 37*]

What plastic is it? The question has plagued many packagers attempting to analyze a material or a competitive package, and determinations become more complex with the multiplicity of new plastics getting into packaging. Flexing, tapping, smelling or burning a sample may not give a sufficient answer. For more accurate analysis, *Modern Plastics* provides in its July issue a tear-out chart covering step-by-step laboratory procedures which will identify any plastic material.

Drug chains are critical of attempts to transplant supermarket packaging gimmicks to their self-service stores. They want distinctive merchandise, not duplicates. Among packaging criticisms at recent *McCall's* drug seminar: pre-test the package, don't expect drug stores to be guinea pigs; give better instructions for use on the package; avoid unrelated or junk premiums. Several comments indicated that drug supers are feeling the space squeeze the same as food supers and that preference will be given to lines which best meet packaging criteria.

Slack-fill fight by F&DA is still alive. Government will appeal decision by Newark district judge throwing out F&DA case against Delson's mints. The issue seems to be whether truthful statement of weight or quantity of product on label is sufficient protection for consumer when over-all dimensions of package are greater than those of contents. Delson convinced court headspace was necessary for cushioning. *Note:* If Delson decision cannot be overturned in Court of Appeals, F&DA lawyers probably will ask Congress for an amendment tightening the slack-fill law.

Crackdown is certain where weight or volume consistently runs below label statement. *Chester T. Hubble* of F&DA's Bureau of Enforcement reported to recent Weights and Measures Conference on 106,695 retail packages checked by F&DA. Worst performers, he said, were corn meal, with 39% of package lots checked having short content; butter, 33.6%; margarine, 29%; salad dressing, 27%; coffee, 26.4%; sugar, 24%. Foods with low frequency of short content were baby foods, under 1%; candy bars, 2.7%; fruit-juice concentrates, 4.2%; potato or corn chips, 5%.

175 MILLION POUNDS OF CRACKERS AND COOKIES PER YEAR!

- Massive volume makes extraordinary demands on packaging equipment
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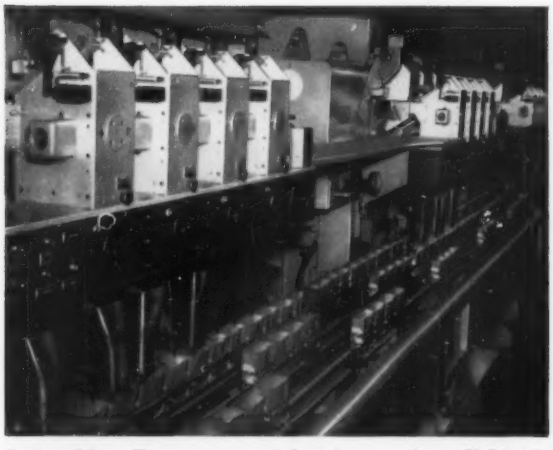

Series of three Pneumatron weighers in operation at Nabisco's ultra modern plant at Fair Lawn, N. J.

You would find it rather difficult to locate a pantry in any American home that does not have at least one variety of NABISCO crackers or cookies "in stock" for demand orders by hungry children and adults alike.

These mouth-watering goodies are of many types and shapes – from animal crackers to pretzels, to delicate and tasty cocktail tidbits. Significant is the fact that NABISCO places heavy dependence on Pneumatic machines of various types to help take care of the enormous output of its battery of modern band ovens – each with a capacity of 700,000 crackers per hour. Core of the Pneumatic "line" is the Pneumatron units which see to it that every package gets its full measure – no more, no less. The remarkable accuracy of these weighing marvels is NABISCO's assurance of exact weight per package, in every package. Product freshness from oven to home is assured by the "double package" also produced by Pneumatic equipment. Top closing and sealing by Pneumatic finally make the package ready for the road.

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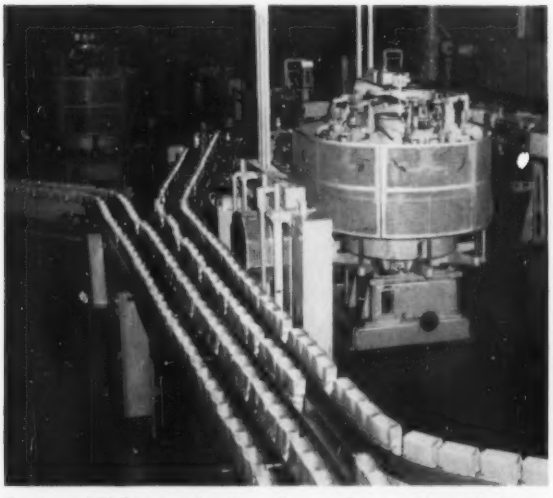

Section of Nabisco animal cracker packaging line. Machines are Pneumatic Cyclo-Seal top closure units.

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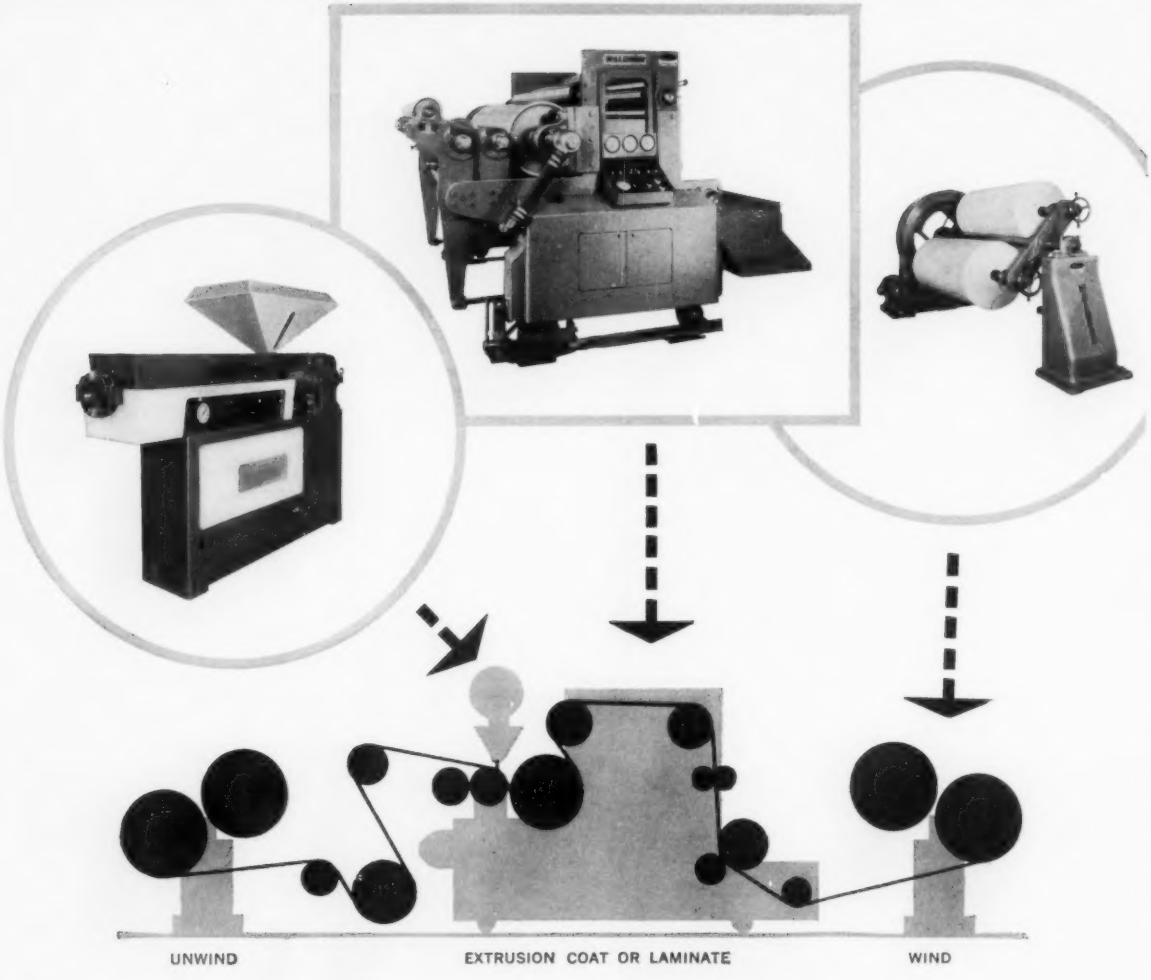

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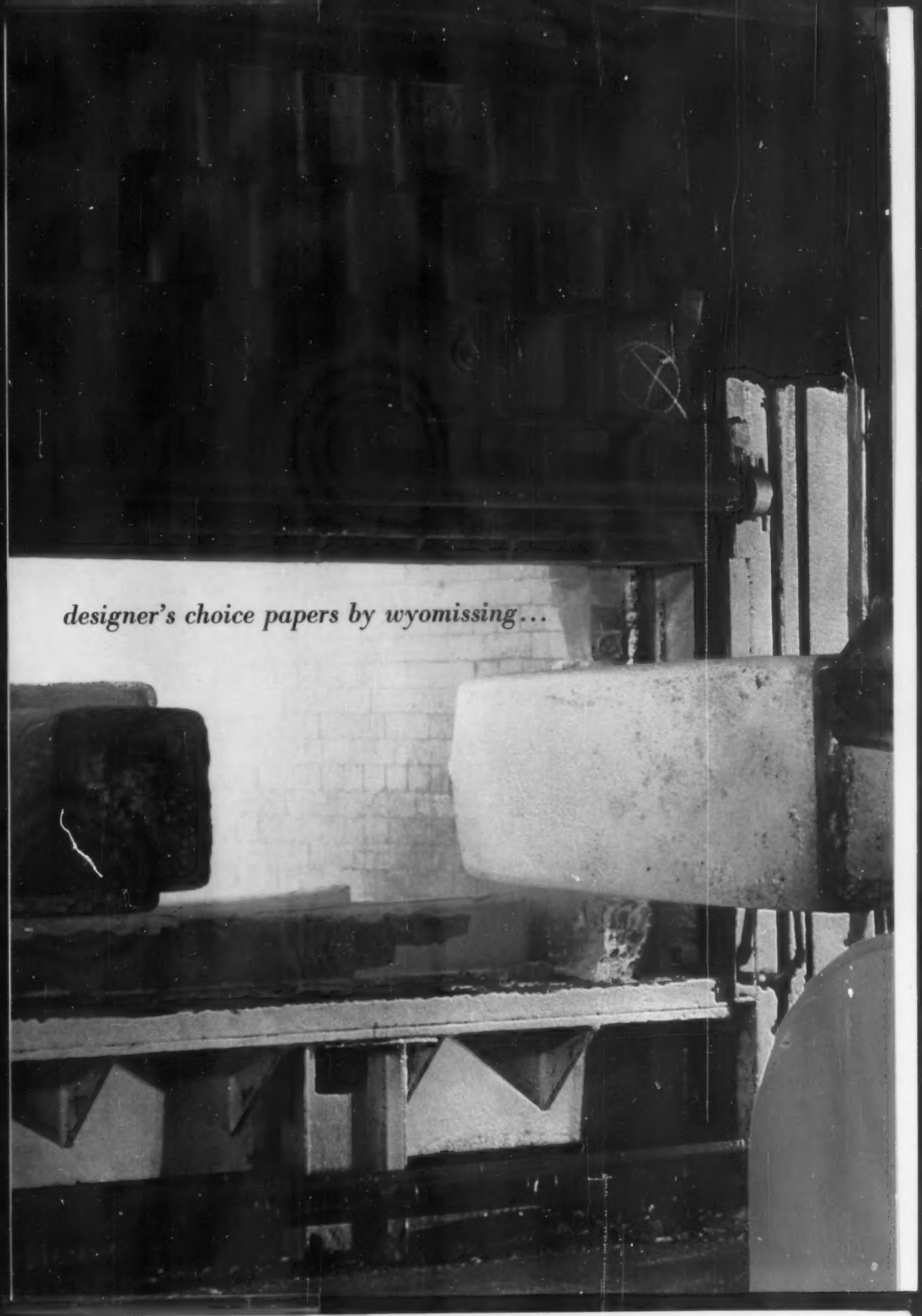

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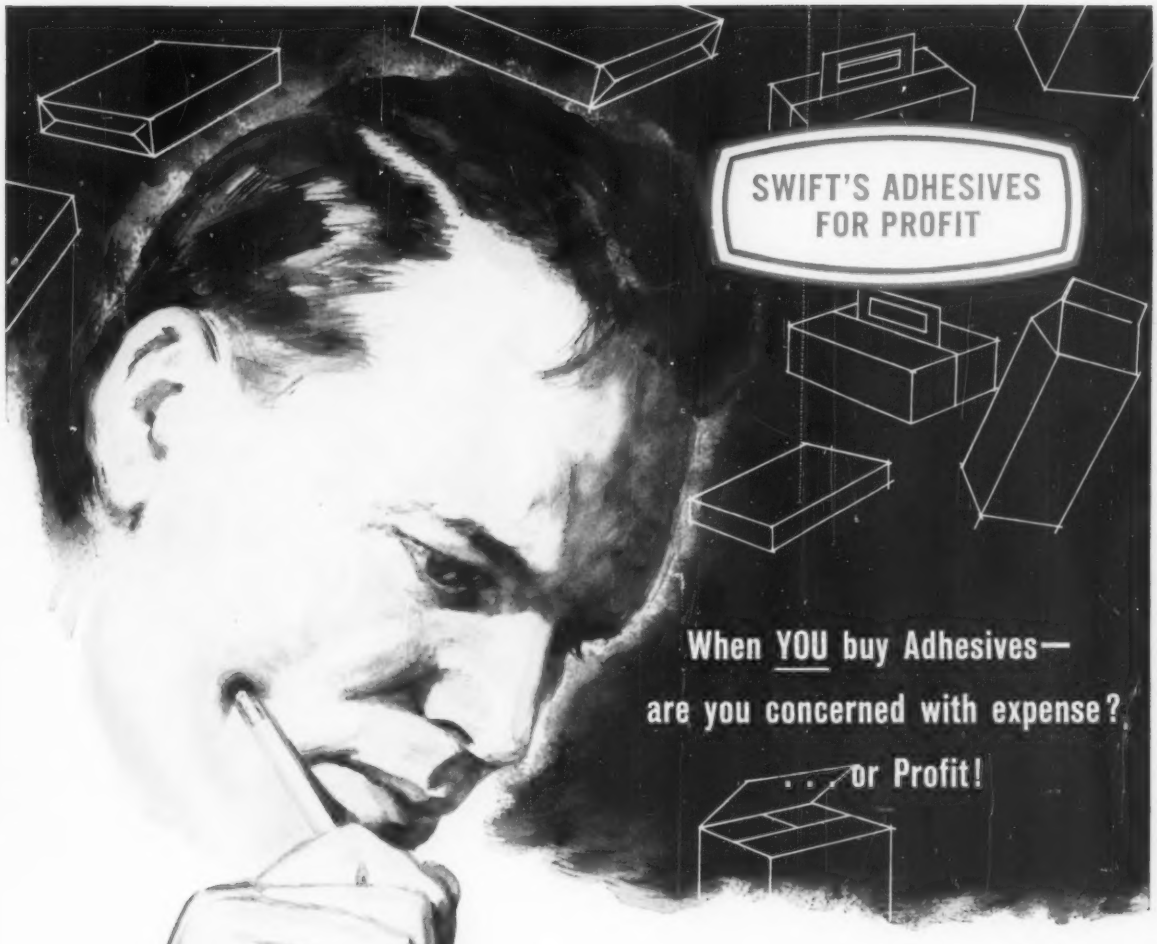

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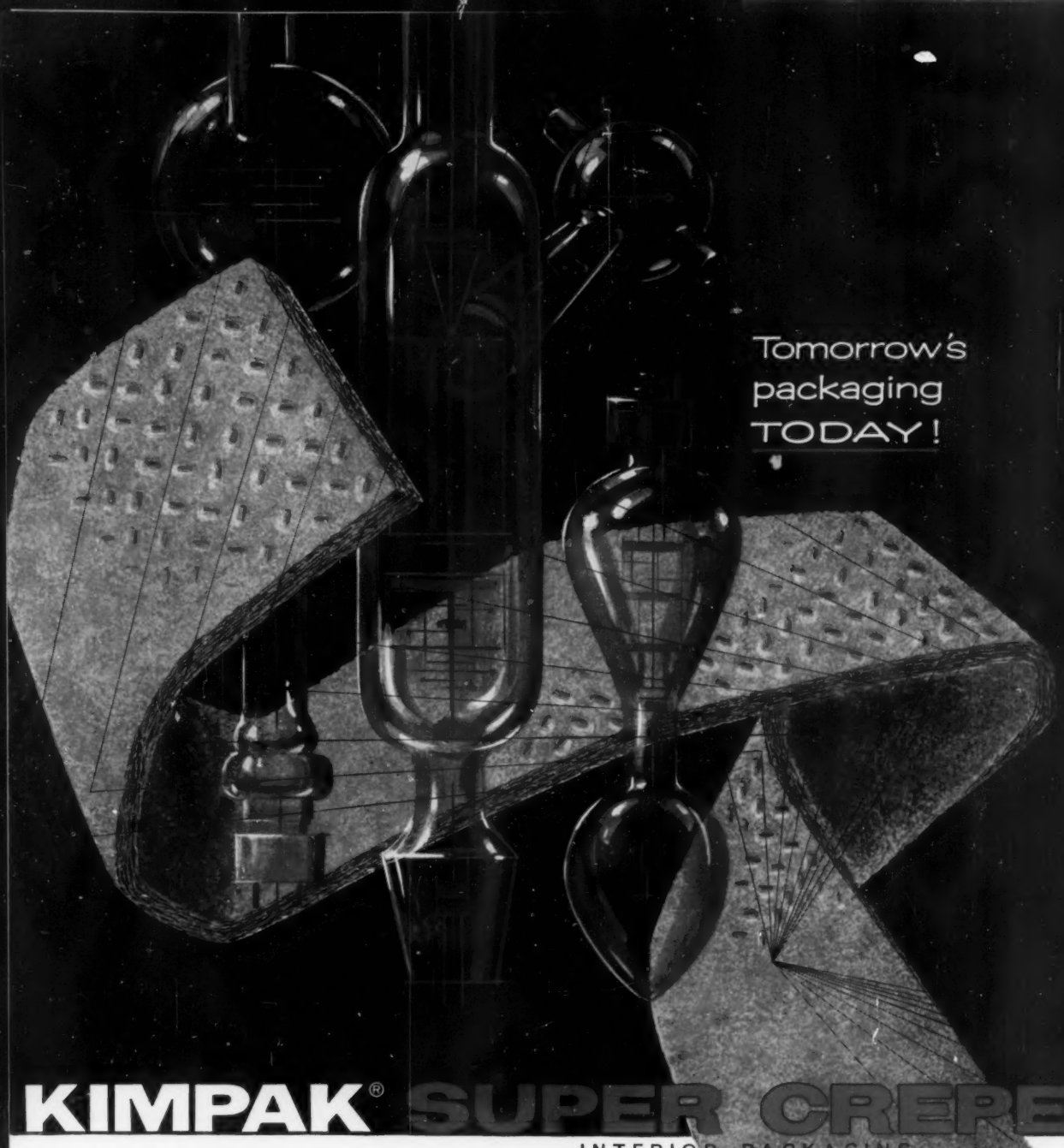

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4 COMMON PROBLEMS IN LABELING CANS

(and how the Arabol man helps you solve them)

1. THE LAP ENDS WRINKLE—This usually means that the varnished or foil side is drying at a different rate from the adhesive coated side. If your label stock has changed in some way, the Arabol man can straighten things out with a special, non-wrinkling adhesive. If spotty application is to blame, he may simply suggest a machine adjustment.

2. THE LAP ENDS WON'T HOLD—This may happen in your plant, or (worse luck) on the customer's shelf. One common cause is a change in the label stock, calling for an adjustment in your adhesive formula. Or perhaps the varnish has been carried over too far, leaving no selvage for the adhesive to grab onto. If so, a solvent-type adhesive is indicated. The Arabol man will know.

3. THE LABEL SHOWS "STRIKE THROUGH"—The difference in heat between the can and the adhesive may trigger a reaction which causes the adhesive to stain through the label. You may need a *harder* pick-up gum. Another possibility—a can has burst in the retort, spraying other cans around it with stain-producing material. The Arabol man will check every angle.

4. THE ADHESIVE "STRINGS"— Should your pick-up adhesive cool, it will thicken and "string" out from the roller. This usually happens when the thermostat on the machine fails to compensate for a temperature drop in the surrounding work area. Whatever the cause, it will pay you to get the Arabol man's advice.

THE BEST WAY to solve adhesive problems is to prevent them from happening. You can begin by telling us *all* the conditions your adhesive must meet—in your plant, in transit and after it reaches your customer. To help you understand these conditions more fully, we have prepared an interesting booklet that can save you no end of aggravation—and money. It's called "HOW TO BUY ADHESIVES—23 BASIC YARDSTICKS." Send for it today.

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Pillsbury Biscuits and Rolls command more attention at the point of sale, stay fresh longer in bright, eye-appealing foil. Labels produced by Western-Waxide Division, Crown Zellerbach Corporation. Cannisters by R. C. Can Company. Jackson & Perkins Rose Bushes are easily and attractively packaged—complete with their own specially formulated soil conditioner—in moisture-retaining foil bags produced by Western-Waxide Division, Crown Zellerbach Corporation.

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TAPE IMPROVES KODAK LABELING... PUTS SMILE IN COST PICTURE, TOO

Labeling time reduced . . . labeling costs reduced . . . neater, more eye-appealing packages . . . faster delivery service.

This is the new picture that developed at Eastman Kodak's color film processing laboratory, Fair Lawn, New Jersey, since they switched to "SCOTCH" BRAND "PAKLON" Film Tape No. 681 on their labeling operation. On at a touch, "PAKLON" Film Tape eliminated a slower, glue-pot method of labeling.

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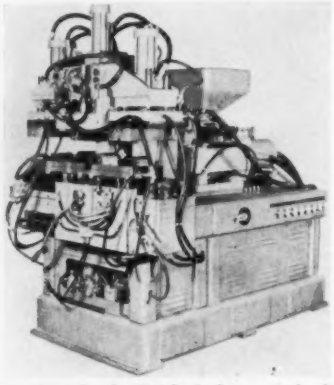
Equipment & Materials

A MODERN PACKAGING editorial feature

Automatic blow-molding machine

Moslo Machinery offers the Model 1246 Duplimatic Blow-molder, an automatic, injection-type blow-molding machine for the mass production of regular or irregular-shaped items, including plastic bottles and jars. Among the advantages claimed for the unit is the elimination of such secondary operations as reaming and trimming; threaded bottle-neck sections are molded to final shape and size integrally with the parison. The supplier notes also that the parisons are injection molded to approximately the finished shape of the bottle, assuring uniformly thick walls and eliminating heavy bottoms and the need to trim "pinch-off." Once the automatic unit has been tooled, says the supplier, it requires minimum operator attention. A separate operator console uses plug-in electronic timers and relays, as well as plug-in temperature controllers. Operating valves are manifold mounted and connected to the electronic control circuit by plug-in sockets. Because of its self-contained design, the blow molder requires minimum area for plant installation, the manufacturer reports. *Moslo Machinery Co., 2444 Prospect Ave., Cleveland 15.*



Protective antioxidant cellophane

An antioxidant cellophane which is claimed to increase by up to 50% the shelf life of potato chips and similar items is being marketed by Olin Mathieson. Called Olin OF-20, the film is coated to retard the oxidative rancidity which causes off odors and flavors in the product. The coating is applied to both sides of the base sheet; no special handling is required. Available in high-yield, 300-gauge film, the material is designed primarily as an inner-wall snack bag. The antioxidant coatings have been cleared for use with foods by the Food & Drug Administration, the supplier reports. *Olin Mathieson Chemical Corp., Packaging Div., 655 Madison Ave., New York 21.*

Long-range static eliminator

New from Simco is a long-range static eliminator called the Aerostat. The device incorporate a static-neutralizer head in the air outlet of a centrifugal blower. It is claimed to neutralize static at distances up to four feet on materials passing through the air stream. Ionization which causes the static elimination is produced on the neutralizer head, and is carried over these distances in the air from the blower unit. The device is available in two sizes. The smaller has an effective length of 10 in.; the larger double unit has an effective length of 20 in. *The Simco Co., Lansdale, Pa.*

'Two-way stretch' kraft paper

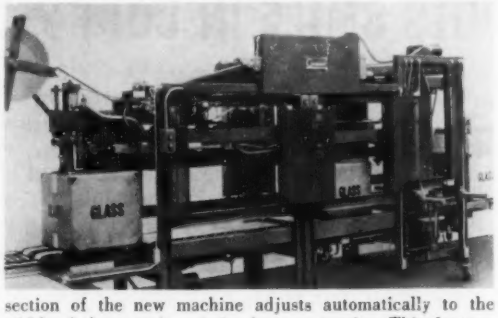
Designed principally for conversion into multiwall bags is Hollingsworth & Whitney's Expanda-Kraft, an extensible kraft paper with lengthwise and crosswise stretch. The extensibility of the paper is reported to give it great resistance to breakage. According to the supplier, lengthwise stretch is five times that of ordinary kraft, preventing the paper from rupturing on impact. The firm also points out that the paper's strength enables the use of lighter-weight stock in bag manufacture. The printable material is offered in three color grades: bleached white, semi-bleached and natural kraft. Further data are available from *Scott Paper Co., Hollingsworth & Whitney Div., Chester, Pa.*

Multi-purpose packaging machine

Ferguson Machine reports the availability of a standard machine which is furnished complete with horizontal and vertical work motions at the indexing dial. The supplier reports that the user need merely add components necessary to utilize the motions for packaging small hardware items or small assemblies. Designed for medium-size packaging operations, the new machine reportedly is designed to facilitate rapid change-over for new production runs. Motions are provided by cams at the center of the machine which are powered by a right-angle drive mounted to an extension of the index-table input shaft. Different strokes, if needed, are achieved by changing cams. A typical machine of this type, says the firm, has a 12-stop, 36-in. dial tooled for receiving small parts from automatic feeders for sub-assembly or packaging. There are six integral parts-placing stations, each serving two positions on the dial. *Ferguson Machine Corp., 7818 Maplewood Industrial Ct., St. Louis 17.*

Mobile automatic carton taper

General Corrugated Machinery's Model TS-20 SS automatically seals top and bottom flaps of random-size shipping containers. The unit is mounted on large casters, so that it can be moved from one production line to another. Each



section of the new machine adjusts automatically to the width of the container it is about to receive. This feature, the company points out, enables different-size cases to be fed in succession through the machine without downtime for size change-over. As many as four different-size cartons can be in the machine at the same time, in varying stages of the sealing operation. *General Corrugated Machinery Co., Palisades Park, N.J.*

Oriented-polystyrene food containers

J-E Plastics Mfg. has begun full production of pressure-formed, oriented-polystyrene transparent and colored opaque containers for packaging fresh and frozen foods. Also available from the supplier are lids, with specified imprinting. The new containers reportedly can be filled at boiling temperatures and quick frozen at sub-zero levels without distortion or crack damage. According to the company, the new containers meet F&DA standards. They are said to be competitive in price with coated paper and foil packages and

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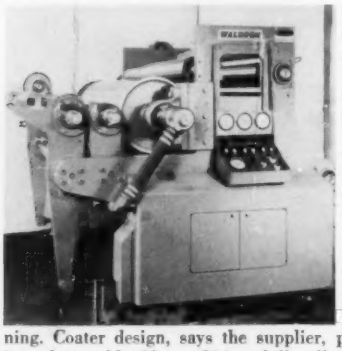
PLANTS COAST TO COAST

Equipment & Materials [*Continued*]

to be suitable for quick freezing many food products heretofore not containable in paperboard. Offered in round, rectangular and other shapes, the containers have snap-on lids requiring no adhesive or heat sealing. Heat-sealed closures, however, are supplied if desired. Printed in up to three colors, the plastic containers can be nested for economical shipment. For information, contact *J-E Plastics Mfg. Corp., 1780 Broadway, New York 19.*

Extrusion coating-laminating unit

A new extrusion coating-laminating machine developed by Waldron-Hartig is reported to offer improved operation characteristics and maximum versatility. The coater is mounted on track rails for movement away from the extruder, thereby eliminating the need to move the extruder. The entire coater assembly also may be raised and lowered by pushbutton control. Distance between die jaws and laminating nip can be adjusted while the machine is running. Coater design, says the supplier, permits the use of interchangeable 18- or 24-in. chill rolls. The unit can be adapted to chill-roll film casting by the addition of auxiliary rolls and drive modification. Specifications and other details are offered by *Waldron-Hartig Div., Midland Ross Corp., New Brunswick, N.J.*

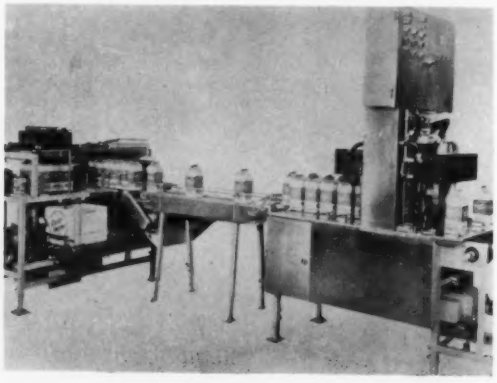


Skid-resistant shipping-case ink

Now available from California Ink is Non-Skid container ink, which is claimed to reduce materially damage to shipping cases, as well as to speed up materials-handling operations. According to the supplier, the ink permits shipping containers to be tilted at angles up to 45 deg. before slippage occurs. The ink is offered in a wide range of colors. It is also reported to combine normal press working characteristics, good gloss and non-rub properties, and to be economical in price. Details are available from *California Ink Co., 545 Sansome St., San Francisco 11.*

Milk-carton inspector and case loader

Thiele introduces a machine which inspects milk cartons, arranges them into case loads and places them into the case. Cartons can be handled at speeds up to 150 per minute, says the supplier. In operation, the machine first checks cartons for such defects as torn heat seal, lack of closure staple, crushed panel along the gusset scoreline and improperly folded gusset. After cartons are arranged into a case load, the load pattern is lifted by top-gripping fingers for insertion into an empty case (wooden, fibre or wire). According to the company, loading is performed more gently than can be done by hand. "Shoe-horn" guides permit automatic loading into a case of minimum dimensions. As the tightly fit pattern of cartons slides into the case, air under the load acts as a cushion which permits the cartons to settle slowly and gently into the case. The tight load fit also guards against shock damage during shipment, says the firm. *Thiele Packaging Machinery Co., 1000 Berry Ave., St. Paul 14.*

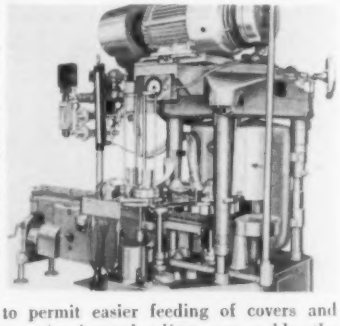


Automatic die cutter and embosser

A combination die-cutting and embossing press which is said to have special features for hot embossing on folding-carton work is available from Bobst. The unit offers 550 tons of pressure and handles sheet sizes up to 36¼ by 49½ in. The upper platen is equipped with a built-in heater which need not be removed from the press when die cutting. According to the manufacturer, maximum heat of 320 deg. F. can be achieved and held. Special provision has been made to allow for heat expansion to protect the press's vital parts. In normal operation, says the supplier, the press will run up to 4,500 sheets per hour for die cutting and stripping. The new Bobst press is distributed nationally by *Thomson National Press Co., Franklin, Mass.*

10-station can closer

Continental Can's new 10-station can-closing machine is claimed to operate at speeds of more than 1,000 cans per minute. Called the 449-HCM-2, it is designed for use with cans less than 3 7/16 in. in diameter. A new feature—power-driven base plates—is reported to eliminate the possibility of dead-heading during double seaming. Other features cited for the new automatic machine are straight-line feed, for minimum product spill, and dual cover feeds, to permit easier feeding of covers and interrupted-field cover trip. A crank adjustment enables the unit to handle cans of varying heights. The machine also can be equipped with undercover gassing-device parts for use in beer and carbonated-beverage plants. It can be driven by hydraulic or electrical power units. *Continental Can Co., 100 E. 42 St., New York 17.*



Self-contained bagging machine

Tele-Sonic offers a self-contained, semi-automatic bagging machine as a mobile supplement to existing in-plant production facilities. Complete with cabinet, bag-stock bin and bagging machine, the new unit is mounted on ball-bearing casters. The machine can be operated by a single worker. It accommodates bags ranging from 4 to 14 in. wide and 3 to 46 in. long. Bags are opened for manual product insertion by a controlled jet of air. Hinged pivot arms guide the product squarely into the bag. The machine's cabinet holds more than 500 kraft bags or 1,000 polyethylene bags. *Tele-Sonic Packaging Corp., 208 W. 27 St., New York 1.*

Extruded low-density polystyrene foam

Dyna-Foam, marketed by a corporation of the same name, is an extruded low-density polystyrene foam available as sheet, film, layflat tubing, pipe, board, solid rod and special shapes. Designed for a variety of packaging applications—including insulation, cushioning and decoration—the material is re-

[*Continued on page 148*]

pots, pans, dust and rust...

Anything in powder sells better in a Harcord canister. The cleansers lined up here are eloquent proof. Harcord knows how to keep the costs down on your low-end line, how to super pack the foaming or chlorinated or premium cleanser, and how to satisfy the housewife with canisters that are quick opening, quick sifting, don't go soggy in her hands. Whatever dry product you pack, in quantity or in small lots, you will find the right protection and the right price when you specify Harcord canisters.

YOU SELL IT BETTER, YOU SAY IT BEST, IN PAPER CANISTERS BY

HARCORD

HARCORD MANUFACTURING CO., INC., 125 Monitor St., Dept. MP-8, Jersey City 4, N. J. New York Tel: BArclay 7-5685

Paper can photos courtesy American Can Co.

Who would dream that opaque, food-type cartons would ever be used to package intimate apparel . . . that manufacturers would be packaging hosiery and clocks in coffee cans . . . or that ball-point pens would inspire the development of roll-on deodorants.

Yet, right now, from Oregon to Florida, nine garment manufacturers are marketing panties, bras and slips in sealed paper canisters. This method of packaging has enabled supermarkets to sell these products like groceries . . . and the implications for the broad range of apparel and flat goods are *tremendous.*

That's packaging—a 16½-billion-dollar-a-year market—always on the alert for new ideas—constantly borrowing or adapting such ideas to suit new needs in *unrelated* fields. No wonder packaging requires such a host of materials, machines, containers, equipment . . . and the services of so many designers, printers, converters and contract packagers.

If *you* sell these or related products or services, your advertising belongs in MODERN PACKAGING . . . the packaging man's "happy hunting ground" for ideas.

MODERN PACKAGING contains more original editorial material, has more paid subscribers and carries more advertising than all other packaging publications combined. For the complete story of the tremendous market possibilities of the packaging field, write today for a copy of the MODERN PACKAGING Market and Media Data File.

MODERN PACKAGING

A Breskin Publication—Authority of the Field for 33 Years

Offices:
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Les Davis
Cutplug
SIZE
CASTING · SPINNING · TROLLING
FOR SALMON, TROUT, BASS, BLUEFISH, STRIPED BASS
AND OTHER GAME FISH.
No. 4ST
LES DAVIS CUT PLUG is built on entirely new principles

To catch shoppers...

skin package with **BUTYRATE**

Clearly displayed merchandise is an irresistible lure to shoppers. To display your product well, while protecting it against dust and handling abuse, use modern skin packaging with sheet extruded of Tenite Butyrate plastic.

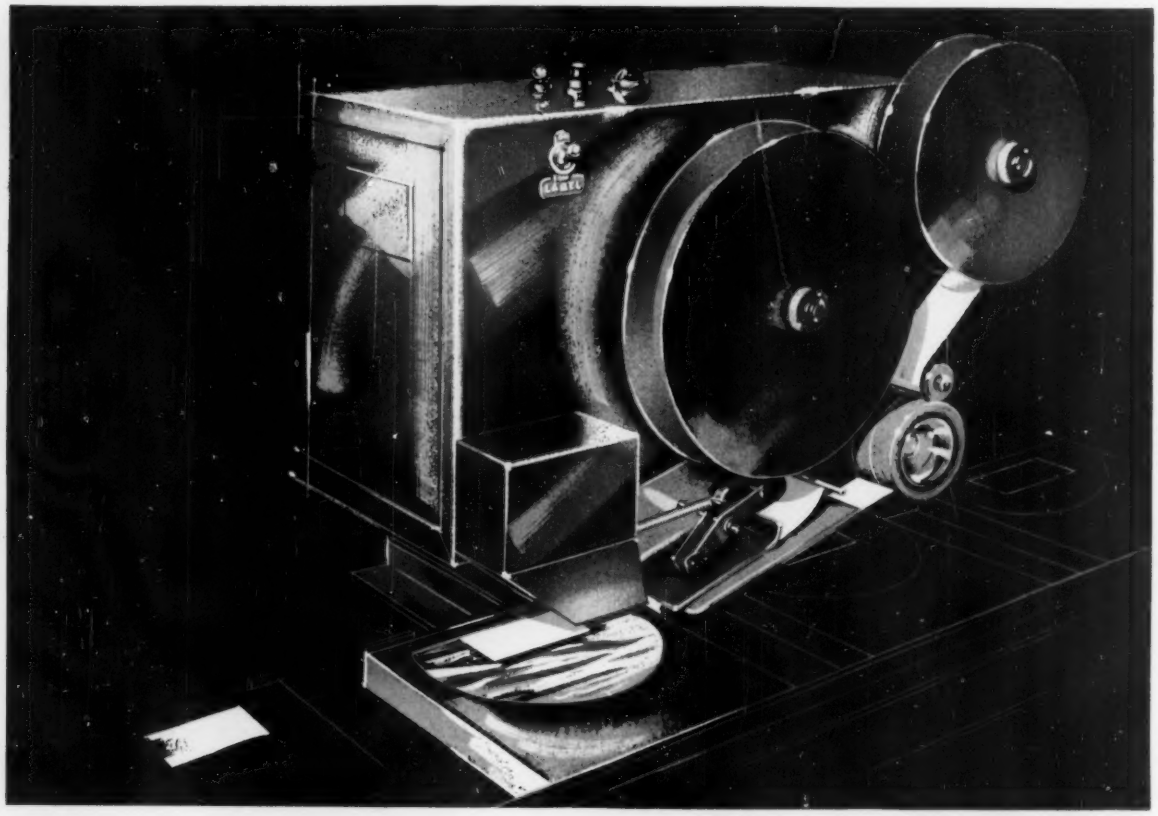
Butyrate sheet can be vacuum formed snugly around contours to make a virtually invisible shield. Simultaneously, it can be heat-sealed to a cardboard backing bearing your sales message. Skin packaging with Butyrate sheet adds a big plus to special promotions and combination offers, since several items can be enclosed together. It also is an ideal solution to the problem of packaging multi-component articles.

Investigate the many advantages offered by skin packaging in Tenite Butyrate. For a list of extruders of Butyrate sheet, write EASTMAN CHEMICAL PRODUCTS, INC., subsidiary of Eastman Kodak Company, KINGSPORT, TENNESSEE.

Cutplug lures manufactured and skin-packaged by Les Davis Fishing Tackle Company, Tacoma, Washington. Sheet of Tenite Butyrate supplied by Transparent Products Corp., San Francisco, California.

TENITE®
BUTYRATE
an Eastman plastic

FROM KLEEN-STIK .....WORLD'S FIRST "JET-ACTION" AUTOMATIC PRESSURE-SENSITIVE LABEL APPLICATOR!



kleen-stik® "LABEL-AIRE"

JET-FAST . . . JET-SMOOTH . . . JET-PERFECT!

Actually picks up and applies labels by "AIR–JET" Action!

1 In-coming air jet picks up label as it peels off backing

2 As package or product trips micro-switch, reverse (outgoing) air jet "shoots" label into exact position

Here's the machine that brings new speed, ease, and economy to pressure-sensitive labeling on the production line. Unlike "conveyor-type" applicators which pull the label from the backing by adhesive tension, the Kleen-Stik "Label-Aire" operates on an entirely new "jet action" principle. Manufactured to highest quality standards . . . thoroughly tested for reliability . . . *guaranteed* by Kleen-Stik.

No Heat - No Water - No Glue - No Hand Operations!

- Handles Kleen-Stik Roll Labels from ½" to 3" wide
- Labels any material . . . . any shape of package
- Perfect registration—adjustable to any production line speed
- Compact . . . lightweight . . . easy to use
- Available on lease — no heavy investment

kleen-stik®
PRODUCTS, INC.

7300 West Wilson Ave. • Chicago 31, Ill.

Plants in Chicago, Newark, Los Angeles, and Toronto, Canada

Write for complete details on the new Kleen-Stik "Label-Aire"

OVER 25 YEARS OF PRESSURE-SENSITIVE LEADERSHIP!

B-G 29092

Bold aluminum packages... pioneered by Ekco-Alcoa

Were it not generally accepted that unusual packages stimulate sales, most products probably would be merchandised in brown paper sacks.

The rub is that in the quest for packaging non-conformity, the unconventional often tends to look conventional.

Ekco-Alcoa aluminum packages, however—like the Ribfoil containers pictured here—are strikingly unconventional. Bold. Unique. Capable of being made in a thousand shapes, sizes, colors; with intriguing characteristics peculiar to aluminum. Ideal for an endless range of premium products—from cosmetics to shoe polish, from tobacco to deodorants.

They're made to order. We take your packaging problem—design, test—and transform it into a bold, exciting aluminum package that fits your exact needs. And we can do this on a low-cost-per-unit production line basis.

The result is a package that is undeniably new . . . undeniably your own. For particulars, get in touch with . . .

EKCO-ALCOA CONTAINERS INC.

WHEELING, ILLINOIS • WHITTIER, CALIFORNIA • LONG ISLAND CITY, NEW YORK

The Plus Container

EKCO is the registered trademark of Ekco Products Company; ALCOA is the registered trademark of Aluminum Company of America. The corporate name and combination mark, EKCO-ALCOA, is used under license by the manufacturer by each of these companies.

Package of Positive Protection For Modern Packagers

... the Fenwal THERMOSWITCH® Unit

Wherever films, foils, or paper are sealed on modern packaging machines, Fenwal THERMOSWITCH Units can assure faster, safer, surer control of heat. Easily adjustable to the widely varying temperature requirements of modern packaging materials, *their high speed and precision are a match for the most sensitive transparent film!*

The outer shell of the THERMOSWITCH Unit is the heat sensitive element . . . strut-and-shell assembly responds almost instantly to temperature changes of only a fraction of a degree. Contacts are totally enclosed and protected. Unit is precise and trouble-free *. . . even under severe conditions of shock, vibration, and corrosion.*

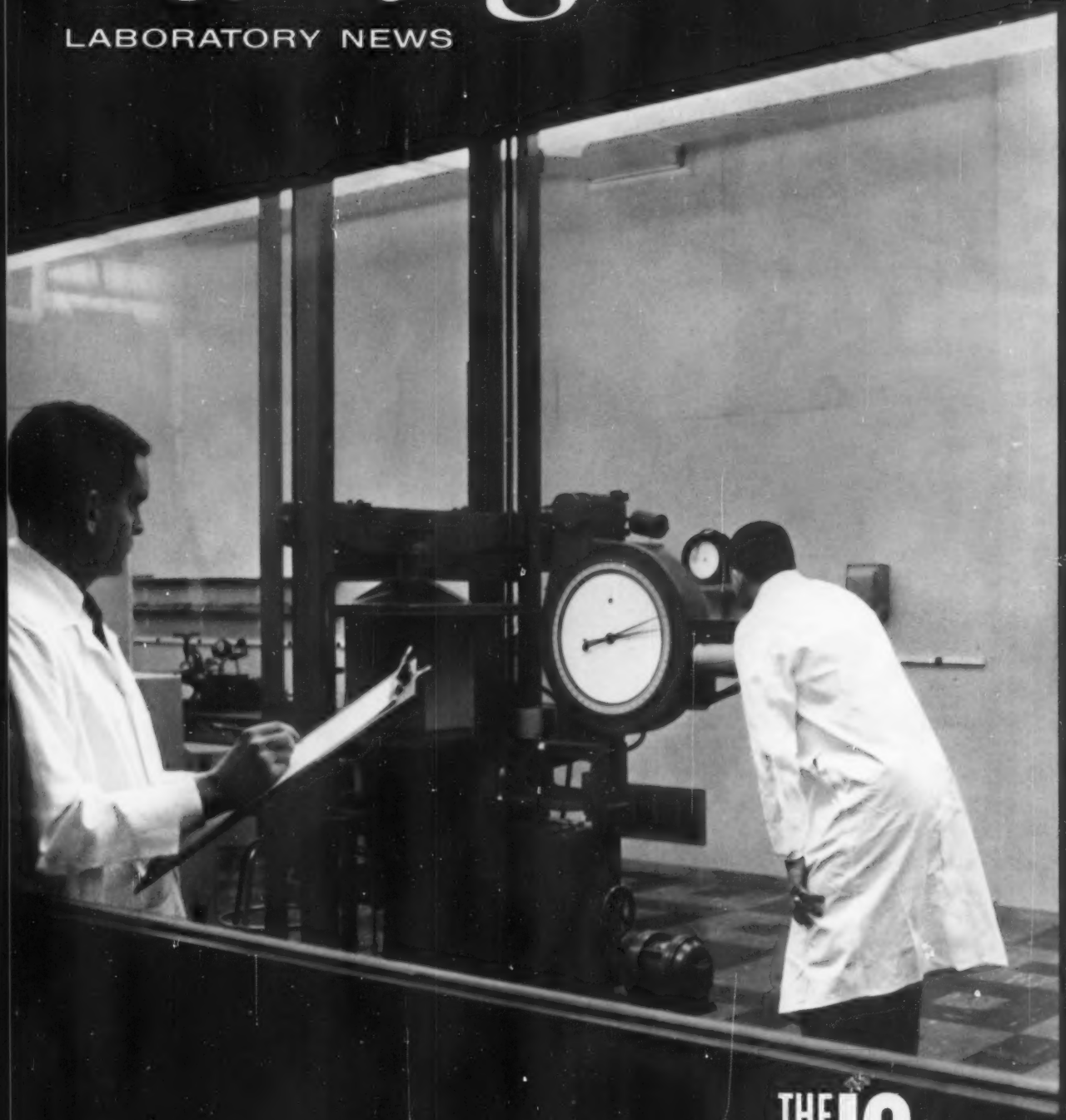
With ratings up to 10A-115VAC and ranges from −65 to +1500°F the THERMOSWITCH Unit is available as a miniature, surface-mounted, or immersion type, with hundreds of possible modifications. It is only *one* of the many Fenwal Temperature Control Instruments with which modern packagers are sealing and saving. Investigate. Write to Fenwal Incorporated, 68 Pleasant Street, Ashland, Massachusetts.

Series 17000
THERMOSWITCH Unit

Another example of how **Fenwal** CONTROLS TEMPERATURE . . . PRECISELY

Package

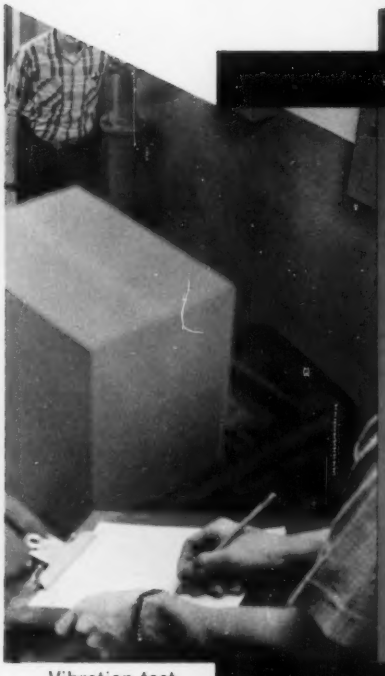
LABORATORY NEWS



THE BIG SQUEEZE

Special issue on pre-shipment testing

Compression test



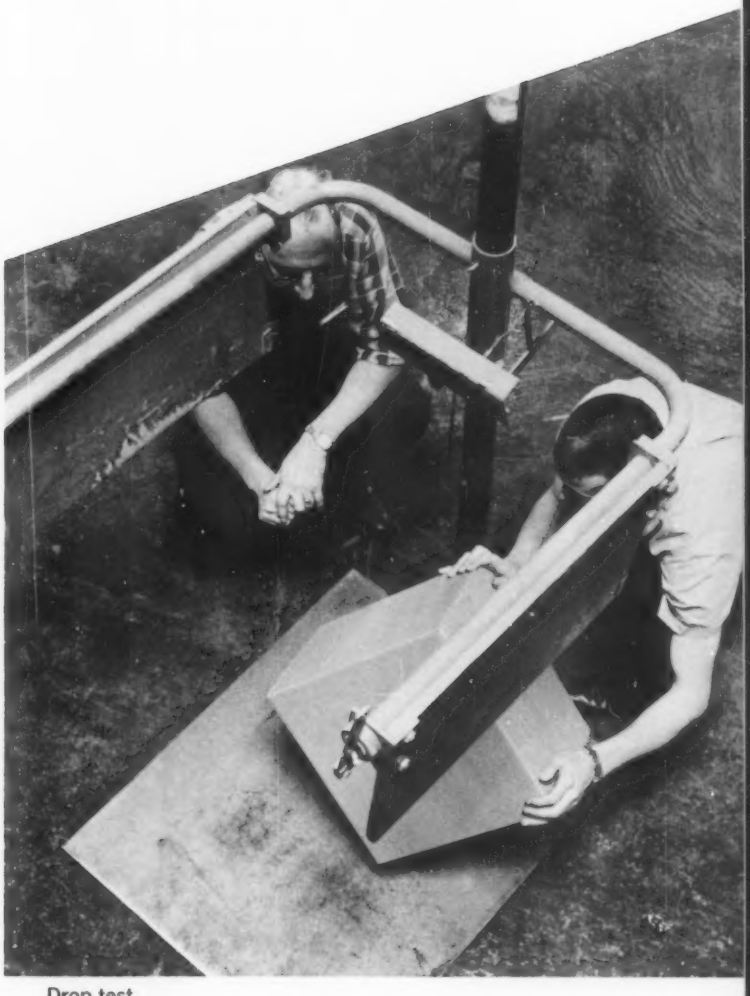
Vibration test

THE BIG SQUEEZE

. . . the dilemma of every corrugated box user who feels the pressure to keep packaging costs at a minimum, but realizes the need for complete product protection. Hinde & Dauch Division's comprehensive pre-shipment testing service predicts the performance of a new corrugated box through the use of standardized tests.

Testing is an integral part of H & D's total packaging service—a routine but highly important procedure in the development of a new corrugated box design. In our completely equipped Testing Laboratory, a team of trained and experienced technicians subject the proposed container to all the rigors of actual shipment as simulated by a battery of standardized and reliable pre-shipment tests. These carefully conducted experiments detect over-packing as well as under-packing, reveal the characteristics a box must have to protect the product. As a result, H & D Division customers keep packaging costs at an efficient minimum—assure safe delivery of their product.

Impact or Conbur test



Drop test

Some of the more critical tests, such as the one for *compression strength*, are conducted in a special room where the variables of temperature and humidity are controlled for optimum accuracy. In this test, a box is placed between two flat surfaces called platens. These surfaces move together, applying pressure to the box. Deflection and load are recorded on an autographic recorder, providing a permanent record of the container's compression strength. These forces are similar to those encountered by boxes when stacked in cars or warehouses.

The vibrations, joltings and jouncings of a rough highway or road-bed damage a product—if its box fails to absorb the shock. Hinde & Dauch's *vibration tester* duplicates these bumps and bounces, pinpointing faults in proposed container design. A packed corrugated box is placed on the table, which is vibrated at a frequency that causes the box to leave the table at some interval in the cycle. After an hour of this torture, contents are inspected for damage.

Abrupt freight car coupling or sudden truck stops can play havoc with the contents of shipping containers. An accurate reproduction of this common shipping hazard is created by the *impact* or *Conbur test*. The packed corrugated container is placed on a dolly which rides on an inclined plane terminating at a fixed backstop. When the dolly is released, it rolls quickly down the incline and slams into the backstop. Speed of the descent can be controlled by varying the height of the starting point.

Containers roll off conveyors . . . slip from the hands of handling personnel . . . tip over and crash to the floor when stacked improperly. How well will the new box resist this hazard? Will corners break open? Will sides split and spill out the contents? The *drop test* is a device for determining a container's ability to withstand the jolting effects of a series of standard drops from a prescribed height on its various corners, edges and flat surfaces. Its operation is simple. A filled box is placed on a platform arm. At a trip of the lever, the platform retracts quickly from beneath the container, and the box plunges to the floor. Contents are then examined for damage.

THE BIG SQUEEZE

Other important tests of container characteristics, in addition to the National Safe Transit program, are employed by the Hinde & Dauch Division to maintain high standards of quality control. The *puncture test* calibrates the resistance of corrugated board to impact from sharp objects. A sample sheet of board is placed in a clamp and is punctured by releasing the heavy pendulum, which swings down, then up into the board. The *Mullen test* for burst resistance is an important indication of container strength. In this test, hydraulic pressure is exerted on a rubber diaphragm with a circular area of exactly one square inch, and the diaphragm, in turn, bulges upward against the sample of corrugated board or linerboard until a rupture is effected. Maximum pressure that the board withstands before bursting is recorded on a gauge.

Mullen test

Puncture test

H & D Division testing laboratories are maintained for a vital purpose—to help you work out correct specifications for your corrugated shipping boxes, to assure you of uniform quality, to help you effect savings without endangering the shipping safety of your products. You pay nothing for this objective, scientific analysis . . . and you gain all the advantages of perfect product packaging.

Hinde & Dauch Division

West Virginia Pulp and Paper

17 Plants • 42 Sales Offices • Sandusky, Ohio

ed in U.S.A. on Pinnacle Blue White Vellum manufactured by West Virginia Pulp and Paper Company, 25 x 38-80

Sounding Board

WE ASK THE READERS

What is the best way to employ consumer research in planning packaging changes?

Lawrence E. Rinck
Marcus Advertising, Inc.
Account executive for
Bavarian Division of
International Breweries, Inc.
Cincinnati

Consumer research was used to develop the Bavarian Beer label, introduced in 1957. We used the motivational interview technique and I feel that this was quite valuable in our project.

Before beginning actual package-design efforts, 250 people were interviewed, each for periods of two to three hours. From these interviews we established or re-affirmed the important characteristics of beer drinkers and what items they like to see in the product they choose for their own use.

After these basic variables were determined, artists designed many prospective labels which interpreted these qualities. These sample designs were eventually narrowed to three and these were presented to 75 additional respondents, again in depth interviews, to determine which design was most appealing and best answered the original research findings. Such label qualities as "beer relatedness," "stand-out value" and "mood design" were evaluated for each label design.

Of course, the final decision depended in a large part on the judgment of management, in addition to the consumer research findings. The research project and label-design program took 16 months. We believe the research was very useful in planning the change.

Curt Cavileer
Vice president-general manager
Lutz & Schramm, Inc.
Pittsburgh

We belong to a couple of national associations: National Preserve and National Pickle Packers Assn. These organizations often conduct huge consumer research projects and publish their results in pamphlet or book form. I have a couple of recent surveys lying here on my desk right now. One of them, "Consumers' and Retailers' Attitude in Regard to Preserves," a psychological survey, published results in a book which contained many useful graphs and charts. Another survey was published in a smaller pamphlet and contains a study on pickles.

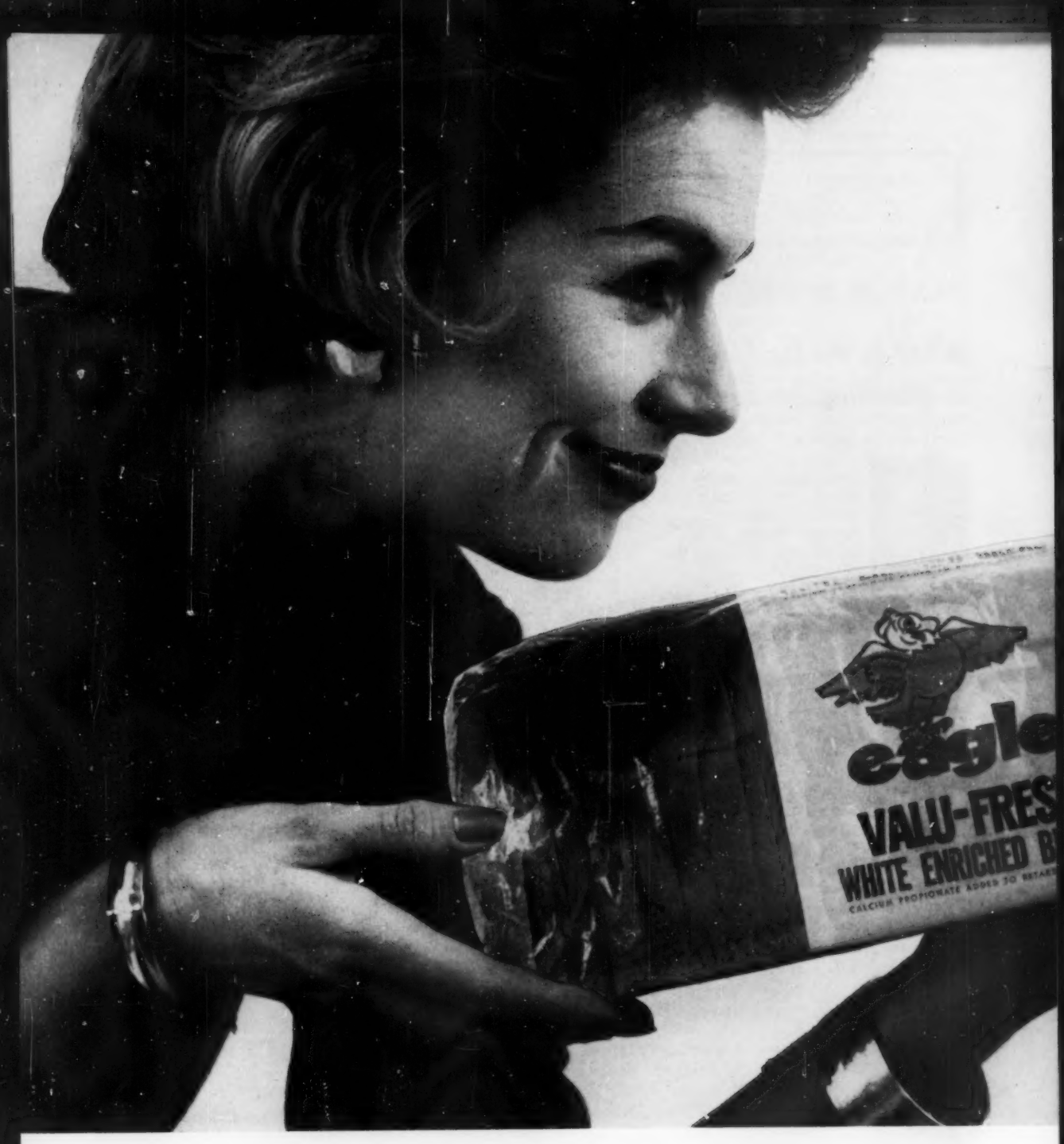
These surveys help me to make comparisons and to note which varieties are the most popular and what package influence is inferred. If some varieties are not doing what they should by comparison, perhaps we need a package change. Or if their survey shows amazing success with a new package, perhaps we'd better obtain that package. The Owens-Illinois Glass Co. and the Armstrong Cork Co. are constantly effecting consumer surveys on pickles.

However, I feel that you can't have complete faith in any research test that you conduct because the interviewee always answers not what he is, but what he would like himself to be. Consequently, I feel that many surveys or consumer research projects are hypocritical. Consumers should lend themselves to plan for the future. As such, the best way to employ consumer research in planning packaging changes is to use questions in the survey which would project into the future —questions regarding future packaging trends and questions which would seek unbiased, unprejudiced, honest answers from the interviewees.

Kenneth Gelpey
President
Traffic Control, Inc.
Medford, Mass.

A dab will hold an elephant! That's what we claim for the strength of Epoxy Weld, the world's strongest mender. Our sales attest to this fact. But more than sales were needed to make people purchase it. We wanted an attractive package to hold the adhesive.

If our experience is a criterion, the best way to employ consumer research in planning packaging changes is to try out on a random audience the old and the new. Or two new ones. "Random" may not be a fair word. We aimed our tests at customers while they shopped, the managers of the stores in which they made purchases and the dealers who sold the product to the stores. All three audiences provided the answers sought, but each supplied [*Continued on page 194*]



STAY-FRESH PACKAGING

with the selling power of clean, clear Du Pont cellophane

Did you know there are over 100 types of Du Pont cellophane? Some let moisture in . . . some let it out. A variety of coatings enables cellophane to assure you the *exact* moisture protection needed. That's an important reason why many bakers and other smart packagers specify Du Pont cellophane. Your products stay fresh from packaging line to consumer. Look fresh, too! No other material can top the selling power you get from cellophane's clean, clear transparency. You also profit from high-speed machine efficiency . . . colorful printability . . . versatility in package construction.

Are you packaging profitably? Find out why it pays you to start your package planning with one of Du Pont's over 100 types of cellophane. Ask your Du Pont Representative or Authorized Converter of Du Pont Films to help evaluate your special needs. Du Pont Co., Film Dept., Wilmington 98, Del.

DU PONT
REG. U. S. PAT. OFF.
BETTER THINGS FOR BETTER LIVING
. . THROUGH CHEMISTRY

DU PONT cellophane

Ucon brand propellants put action in products

Why don't you discover UCON Propellant service, too?

UNION CARBIDE CHEMICALS COMPANY
Division of Union Carbide Corporation
30 East 42nd Street, New York 17, N. Y.

UCON and UNION CARBIDE are registered trade marks of Union Carbide Corporation

World Report

Abstracts from foreign packaging magazines

ENGLAND

Sputnik suggested to radio shock data

A test case fitted with compact electronic equipment to record mechanical shocks in handling and transport, and to radio detailed information back to its home laboratory, has been proposed as a possible new way of measuring journey hazards to packages. The suggestion was made at the First International Conference of Packaging Research Institutes organized by PATRA (Printing, Packaging & Allied Trades Research Assn. in England). If such a "sputnik" package were available, says *PATRA News*, much more detailed records of the impacts and vibration to which packages are subjected could be obtained.*

FRANCE

WVTR through microcrystalline wax

A study of the character of paraffin waxes and their molecular structure in relation to their value as moisture-vapor barriers is presented in *Emballages* (France). Conditions under which the coatings are applied are considered in the light of the crystalline structures thereby obtained. The article points out that where the microcrystalline waxes are applied to paper by dipping, brush or spray coating, the consequence of chilling in cold water troughs is to produce a much impaired crystalline structure in coatings, because this procedure does not allow for the growth of relatively large crystals and also may cause fissuring of the coating. Nonetheless, this procedure is formally followed, it is pointed out, since during stockage and after a certain length of time the wax tends to re-crystallize, giving rise to larger structural elements which orient themselves parallel to the surface of the coating, while the fissures also tend to heal themselves. A rise in temperature while the paper is in stock will accelerate this change, it is stated. The findings, based on a study by Pierre Louis, director of the French Packaging Laboratory, evaluates these effects and describes the means used for determining the ultimate barrier values obtained when waxes are coated onto various types of paper and film stocks. Conclusions are that the resistance to the passage of moisture vapor depends on crystal size, since the vapor passes *between* and not through the crystals, and that high barrier value is best obtained by cold air blast chilling, while any physical break in continuity of the wax film may occasion either large fissures or microscopic cracks, both of which profoundly affect the barrier values achieved.*

SWEDEN

Bottles blow molded with colored stripes

From Sweden comes news of a machine which will produce blow-molded plastic bottles with integral colored stripes or swirled patterns. The colored stripes are sharply defined, according to *Packaging News* (England) and can be wide or narrow, evenly spaced or in groups in any position in the molding. The effect is achieved with the aid of an attachment on a blow-molding machine that unites the different-colored materials. Precise control of the speed of extrusion of each material is essential, it is stated, so that it is delivered to the molding head in correct proportions. The method will produce bottles with or without embossed decorative patterns and lettering and does not exclude subsequent printing by usual methods. The striping process does not slow production, it is reported, except that at present it limits the machine to single-head operation. For maximum production of small units, a triple mold would normally be used.*

BELGIAN CONGO

Institute stamp for good packaging

Following the successful tour of an itinerant packaging exhibition in the Belgian Congo under the sponsorship of the Institut Belge de L'Emballage, package manufacturers and users, carriers and insurers have decided that an institute should be set up in the Congo. According to the Belgian Institute's bulletin, both Leopoldville and Elisabethville will shortly possess adequate laboratory-testing facilities, thanks to the assistance of the carriers. Testing equipment will be furnished by the Belgian Institute and will be operated in accordance with agreed procedures for the grant of a stamp of good packaging to be titled "Congo Interior." A commission is to be set up for the grant of such stamps and marks, and will be formed of representatives of the Belgian Chamber of External Commerce, the carriers, the Economic Affairs Service for the Province, the local Chamber of Commerce and insurance bodies concerned.

One of the principal activities will be the grant of the stamp for fibreboard containers adapted to Congo usage. It is expected that industrial users will insist on containers being supplied to match requirements of the aforesaid specification. For the Congo, it is specified that the tests be applied to packages after two test journeys of not less than 1,000 kilometers.*

DENMARK

Label attachment for pouch former

Danish engineers have developed an attachment that heat seals labels to film bags made on standard automatic pouch forming, filling and sealing machines, according to a report in *Packaging News* (England). The printed film or paper label is bonded to the seals at both ends of the pouch as well as along the longitudinal seam. This labeling, it is stated, enables the pouch-forming machine to be used for comparatively short runs on different products, simply by changing labels. The attachment was developed for application by a chain-store organization in Copenhagen, which is using the new device to pack a wide range of food products.*

WEST GERMANY

Fast filler for tablets in glass tubes

Tablets are packed into straight-sided glass tubes at high speed in a German machine that uses an entirely new filling principle, according to *Packaging News* (England). The tubes are carried in an inverted position over the ends of a series of tablet feed channels. At each channel, one tablet is pushed up into the tube; at the final station a plastic plug is pushed in. There are as many tablet channels as there are tablets in each filled tube. Once there is a tube at every station, the machine delivers a filled tube and takes in an empty one at each indexing movement of the large tube-feeding wheel. A 20-channel version will deliver 150 tubes, filling 3,000 tablets per minute. The tubes are held in place in the shallow recesses of a starwheel by a narrow fabric belt which runs onto the starwheel at the point where

***For additional information, write: World Report Editor, MODERN PACKAGING, 575 Madison Ave., New York 22.**

the tubes are transferred from the tray-type hopper and the large starwheel by a smaller one. The ends of the tablet channels form an arc pattern so that the tubes in the starwheel move over the bottom tablet in each.

The starwheel moves intermittently, stopping the inverted tubes over the end of each feed channel. Every time the starwheel halts, one tablet is pushed into each tube by the short stroke of pushers immediately beneath the bottom tablets in the channels. Plastic plug caps are moved from a bowl feed, prongs upward, and are thrust into the filled tubes by a pusher mechanism that works in unison with the machine's tablet pushers.*

AUSTRALIA

Gift-wrapping promotion

A large section of the May issue of *Pakit* (Australia) is given over to the added sales to be won by store gift wrapping and pre-wraps by the manufacturer. "In good times such as the present, when full pockets bring about more gift buying," the article states, "a gift-wrapping department or service is no longer a temporary fringe activity, but a more or less permanent and necessary adjunct all the year round. Gift wrapping has now gone beyond the stores into the production field and many firms are now packaging their goods beautifully gift wrapped."*

ENGLAND

Free market tests on bottles

Tests to determine whether a package has a good chance of success on the market are being offered to any company planning to launch a glass-packed product. The service is being introduced by the British Glass Manufacturers Federation, according to *Packaging News* (England). Supposedly it will enable packers to test consumer acceptance in advance. The service provides facilities for testing in from one to four progressive stages. Three of the tests will be free of charge, but a nominal charge is to be made for planning the fourth, an area test-marketing scheme. A consumer panel drawn from 400 households in England and Scotland is taking part in the first two stages—design testing and container-in-use testing. According to known or probable market for the product, a balanced sample from this panel will be employed to give its reactions to the design of container and label. This information will be recorded and presented as a report to the packer. Any new glass container and the product for which it is designed can also be tested in actual home use by members of the panel, it is stated.*

FRANCE

Optimum automation of washing powder

A plant where one man alone is required to oversee the packaging of four tons of washing powder an hour is described in the lead article of the May-June issue of *Emballages* (France). This plant, it is stated, offers the perfect example of 100% automatic operation. Four tons of products are processed, cartoned and case loaded ready for shipment every hour. And one man is sufficient to assure conduct of product and supervision of the operation.*

ENGLAND

Automatic warehouse for self-service store

Two British firms have linked up to develop an American system of automatic warehousing that enables items for an order to be selected and delivered as a batch in 15 seconds, according to *Packaging News* (England). The order, which may be of any size, can be collected from a choice of several thousand packaged items. A planned development of this system would be to provide an automatic warehouse above self-service stores. A card system allows shoppers to note their purchases without removing samples from display. At a cash desk these cards are fed into electronic reading equipment that calculates the bill and delivers the assembled order to a collection booth near the cash desk within seconds. The system apparently is similar to that recently reported in MODERN PACKAGING. (See "The Supermarket: What's Happening?" May, 1960, p. 83.)*

SPAIN

Comments on standardization

An editorial in *Information de Embalaje* (Spain) comments at length on the value of standardization of packaging in industry, but points out that there must be a distinction between that which is a standard and that which is typical. The editorial quotes the European Packaging Federation on this subject to prove its point: "Excessive standardization, for the mere pleasure of having a number of standards, can cause more harm than good to the economy of a country; all standardization must be fundamentally based on science and technology."*

GERMANY

Heat-sensitive labels for wet surfaces

A firm in West Germany has developed a series of heat-sensitive papers suitable for labels. According to *Verpackungs Rundschau* (West Germany), one type has been developed especially for labels which can be applied to wet glass bottles as used in the packaging of beer, wine, vinegar and beverages. By using such labels, the article states, it is possible to label wet bottles immediately after they pass the washing machine without the need of first running them through a drying tunnel.*

FRANCE

New closure and closuring machine

A polyethylene-cum-aluminum closure is applied by a machine now added to a wide range of bottling and capping machinery built in France. Described in *Revue de l'Embouteillange* (France), this new closure, called "Tri-Top," consists of a hollow polyethylene plug with annular rings on the top seating and a fin-like extension at the base, held in place by an aluminum foil seal with a "tear-off" device. After removal of the foil cap, the polyethylene plug can be removed with the fingers and easily replaced to provide an efficient re-seal. The foil cap is discarded. Reportedly, the closure may be used for any non-carbonated liquid. Its advantages are security and low cost, as polyethylene plug and foil overcap use a minimum amount of material. It is suggested for fruit juices and non-carbonated beverages. It is presently being made available in 12-mm. high sizes.*

ENGLAND

Spode china wrapped in cellophane

Departure from tradition has been made by W. T. Copeland & Sons Ltd., which is now wrapping for shipment each piece of Spode china in heat-sealed cellophane. The procedure, reported in *Merchandising Vision*, a publication of British Cellophane Ltd., replaces the old method of tissue wrapping. The method has many cited advantages. It keeps the china clean and protected from the pottery to consumer. It eliminates the need of unwrapping to identify patterns. The pattern of each piece can be seen clearly through the wrapping and sets can be quickly assembled and placed on display in their protective wrappings. There is no delay for cleaning or re-polishing before an order is put on display or sent to a customer.*

*For additional information, write: World Report Editor, MODERN PACKAGING, 575 Madison Ave., New York 22.

the triumph of an idea

AVERY labels

are pressure-sensitive for profitable production

25th Anniversary 1935-1960

It all began with Avery . . . and an idea about a new type of "self-sticking" label –the world's first pressure-sensitive label!

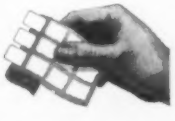
The story of industry's acceptance of this label and its ever-growing use of pressure-sensitive labeling is truly the story of Avery–and the *Triumph of An Idea!*

Modern Avery Labels have contributed much to efficient labeling methods and more profitable production, for unlike ordinary labels–all Avery Labels are *applied dry*–with a soft finger touch–for *clean*, pressure-sensitive labeling. Each label is individually diecut–on sheets or rolls–for manual or fast, automatic labeling.

Avery is the only manufacturer of self-adhesive products that has complete control of production facilities–from developing and mixing of the adhesives to the completed label. Specialized experience and "know-how" that is unequalled today!

May we tell you more about Avery Labels–and other Avery pressure-sensitive products...and show you how their greater efficiency will save you time and money?

Write for your **free** copy of AVERY's new labeling catalog and a colorful brochure describing Avery's new pressure-sensitive Metallics that are gaining swiftly in popularity as decorative trim, panels, nameplates.



AVERY LABEL COMPANY *a division of Avery Adhesive Products Inc.*

1616 South California Avenue, Monrovia, California

Here are but a few of the thousands of ways in which manufacturers are profitably using AVERY LABELS today

Samples of Avery Adhesive labels–removable KUM-KLEEN and permanent PERMA-GRIP–will tell you more than a thousand words. May we send yours?

AVERY LABEL COMPANY, Div. 127

127 Liberty St., N. York 6 • 608 So. Dearborn St., Chicago 5 • 1616 So. Calif. St., Monrovia, Calif.

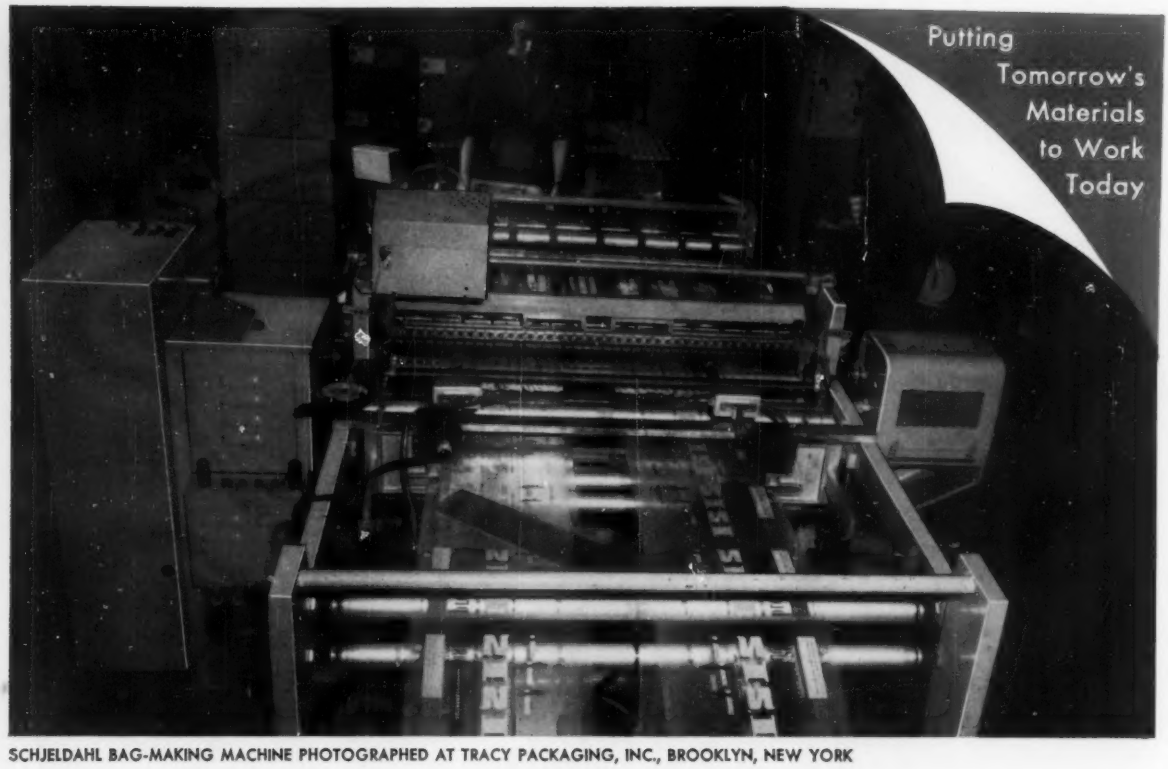
☐ Please send free Avery catalog and the METALLICS brochure. ☐ Include KUM-KLEEN and Perma-Grip sample labels.

Name _____

Company _____

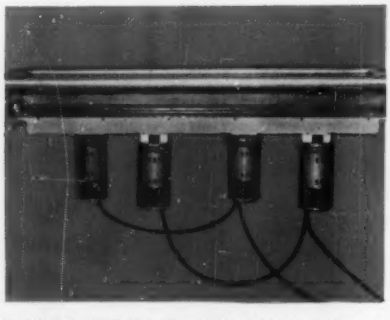
Address _____

City _____ Zone _____ State _____



SCHJELDAHL BAG-MAKING MACHINE PHOTOGRAPHED AT TRACY PACKAGING, INC., BROOKLYN, NEW YORK

"With Schjeldahl machines we can change jobs completely in 10 minutes"



WITH SCHJELDRILL ROTARY PERFORATOR attachment, your Schjeldahl machine is perfectly equipped for specialized multiple punching jobs. The 38 drills are spaced 1" apart across bank. As many as four banks may be mounted on one frame. Drills spin for easy, non-tear perforating. ⅛", 3/16" and ¼" drills are available and interchangeable. May be used on film, paper or foil.

"We have been running our Schjeldahl a minimum of two shifts, six days a week for nine months," reports David Mersten, president of Tracy Packaging in Brooklyn. "Our production records show an average of 2½ hours per week for maintenance and down time combined. The production record is wonderful. The other thing that pleases us is the ease and speed of set up and change over. On the average, *we can shift from single roll to split roll or change jobs completely in 10 minutes.*"

Schjeldahl machines will produce in the same fast, versatile way for you. Our model S-20T, the "Split Roll" machine, gives you up to 120 cycles per minute, produces 4 printed bags simultaneously with each cycle. It runs bags as small as 3" x 3", as large as 40" x 70", in any shape desired out of ¾ to 4 mil materials, sideweld or bottom seal.

Why not put this money-making machine to work in your plant? Write, wire or call for the facts on Schjeldahl bag-making machines and complete line of attachments and accessories.

PRODUCTS GT SERVICES

G.T. Schjeldahl Co.

Northfield, Minnesota

1. **Dessert's ready**—no pots or pans to wash with Ekco-Alcoa disposable foil containers. 2. **Pharmaceuticals**—stay full strength in sterile, nontoxic, airtight Alcoa Aluminum Foil pouches. 3. **Cigars, cigarettes, pipe tobacco** are protected against dehydration by Alcoa Foil. 4. **Instant shelf appeal** and more sales with rich, gleaming Alcoa Foil labels. Transparent inks on foil give new, glittering, attention-getting color effects. 5. **Foil-corrugated, laminated containers** add new merchandising sales appeal—maintain desired product temperatures longer. 6. **Single service items** can now be packed without preservatives in foil-to-foil hermetically sealed containers. 7. **Foil-laminated fiberboard cans** open with a pull of the string—reclose for second-use freshness and convenience.

How Alcoa RESEARCH in aluminum foil brings you BETTER PACKAGES

A pretzel manufacturer increases his sales 56 per cent. A candy manufacturer gets chain store distribution almost overnight. A cigar maker finds a way to keep his cigars fresh five times longer—and drastically cuts his returned goods loss. *Things like this happen when aluminum foil is used properly in a package.*

Alcoa's Research Laboratories can make similar things happen for you. At the Foil and Packaging Division there is a staff of expert technicians who have the experience and desire to develop for your product a package that embodies the best that foil can and should accomplish.

Alcoa® Foil can do many things for your product. Alcoa Foil keeps it fresh on the market shelf longer . . . can move it off the shelf faster . . . increases sales.

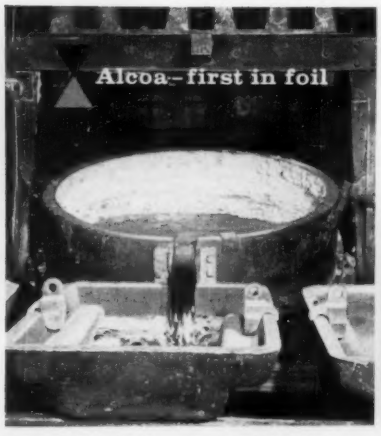
FOIL SELLS

Packages and labels made from Alcoa Foil catch the consumer's eye, make the sale. Alcoa Foil's "look of value" has often been the key influence that moved a product into a higher sales bracket.

FOIL PROTECTS

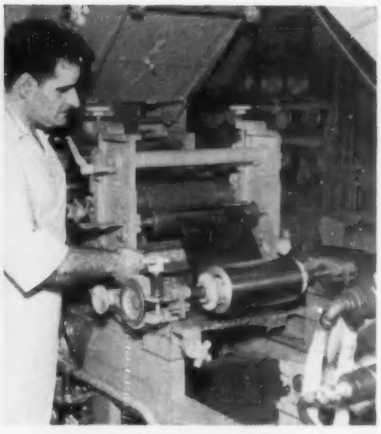
Aluminum foil is opaque, so it stops harmful light. It is impermeable, so it acts as a barrier against the flow of moisture or gas. It is metallic, so it defies the attack of insects and air-borne organisms. It is reflective, so it keeps the product near its desired temperature.

If you're contemplating a change to foil, there are many important questions to which you should have the answers. Here's how Alcoa Research Laboratories can help you . . .

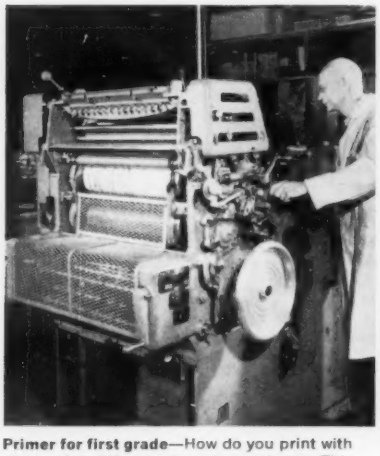


From ore to foil—Alcoa Research Laboratories have their own smelting pots and remelting furnaces—process raw bauxite to alumina, reduce alumina to aluminum, melt it, cast it, roll it—do anything that is necessary to develop new alloys for better product performance.

Quick study—This cabinet is used in determining the water vapor transmission rate of various foil-substrate structures.



Samples of foil structures—Experimental packages for customers start here. Machine laminates aluminum foil to paper and/or plastic film. Finished packages are checked in Alcoa laboratories—also are sent to customer for testing.



Primer for first grade—How do you print with oil-base inks? Use wash coats or primers. This offset press finds out which primers will give quality reproduction of type and half-tones.

Sweatboxes—Humidity cabinets test for shrinkage and draw of laminated material. Packages are exposed for weeks at a time to hydration, dehydration and temperature variations.

Age before beauty—One test for all laminates is controlled heating at 140° for 48 hours. This accelerated aging is equivalent to room storage of six months to a year.

Pretest your package in the Alcoa Research Laboratories

Does your package give adequate product protection? How does your present package compare to packages of aluminum or aluminum laminations? What will aluminum foil do for your product?

To get the answers in the least expensive way, *pretest your package* in Alcoa's full-scale packaging laboratory. It is the only one of its kind in the industry and the most experienced. In the last 22 years Alcoa has run more than 10,000 individual tests covering adhesives, coatings, inks, laminations, water vapor transmission rate, and other characteristics of foil as a packaging medium. Let us put this knowledge to work for you.

MORE ALUMINUM SPECIALISTS WORK FOR YOU

Backing up the Foil Packaging Division are many other research divisions of the Alcoa Research Laboratories and *hundreds* of people engaged in specialized research on aluminum. These can be, and are, called on to supplement the investigations of the Foil and Packaging Division when a particular problem calls for knowledge or research in other fields.

ALL THE FACTS YOU NEED

The Alcoa Foil and Packaging Division can help you decide whether your product will keep better and sell better in a foil overwrap, pouch, bag or carton.

You'll find out how your package will stand up under conditions of heat, cold and moisture.

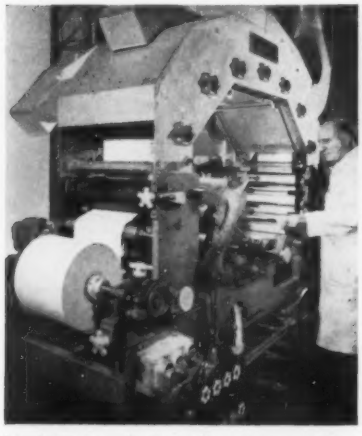
You'll be able to experiment with various color schemes and new label designs by taking advantage of Alcoa's printing know-how.

You'll see how your product will look on the shelf, stacked side by side with competition in Alcoa's "store."

In short, you'll eliminate many of the doubts and uncertainties that exist before launching a new package on the market.

There are more ways Alcoa Research Laboratories can help you . . .

Proof is in the pulling—Testing stripping strength of a lamination. Meter shows resistance to pull. Alcoa records thousands of tests made—can quickly furnish full data on laminates and adhesives used.



Laminations unlimited—Alcoa is now working on adhesion-promoters for all types of foil laminations.

Alcoa–first in foil

More than 10,000 tests

The permanent files at Alcoa Research Laboratories may contain an immediate solution to your foil packaging problems. For example, just in the last several years Alcoa has tested thousands of different adhesives, coatings, laminations—and can recommend the best for your purpose.

Top packaging team–Alcoa and converter–works with you

To know exactly where you're going, when you go into foil—come to Alcoa first. Working with the country's most experienced converters—providing more than any single company working alone can offer—Alcoa can help you create a superior package for your product.

MAIL COUPON TODAY

—start now to get all the advantages that go with this label . . .

Better Packaging
ALCOA ALUMINUM
Foil Packaging

TO: Aluminum Company of America, Dept. 1655-H, Foil Packaging Division, Pittsburgh 19, Pa.

I am interested in: ☐ Aluminum Closures ☐ Foil Packaging ☐ Cans and Containers

☐ Fruit	☐ Sugar	☐ Oil	☐ Automotive parts	☐ Roof coating
☐ Asphalt	☐ Candy	☐ Ice cream	☐ Pipe tobacco	☐ Calking compound
☐ Baked goods	☐ Cereal products	☐ Matches	☐ Cocoa	☐ Milk
☐ Battery acids	☐ Toys	☐ Metal parts	☐ Coconut	☐ Pharmaceuticals
☐ Beer packaging	☐ Cigarettes	☐ Resins	☐ Cookies	☐ Liquor
☐ Biscuits	☐ Cigars	☐ Potato chips	☐ Cosmetics	☐ Wine
☐ Books	☐ Fish	☐ Pretzels	☐ Chemicals	☐ Insulation
☐ Bulk chocolate	☐ Flowers	☐ Fresh meat	☐ Eggs	☐ Cheese
☐ Dog food	☐ Frozen foods	☐ Seeds	☐ Fertilizer	☐ Others
☐ Salt	☐ Poultry	☐ Tile		
☐ Detergent	☐ Grease	☐ Viscose pastes		

Name_____

Company_____

Address_____

City_____ Zone____ State_____

EXCEPTIONAL PRINTING MAKES THE DIFFERENCE

on RIGID plastic containers

...helps make the sale!

- Printed or decorated up to 4 colors on crystal clear, transparent or opaque colors
- Largest line of RIGID plastic containers
- 1/5 the weight of glass—greatly reducing ever-increasing shipping and handling costs
- Lightweight and shatterproof—with rigid wall protection
- Economical—with customer re-use value
- Also made of new high density polyethylene —Poly-Opal*. Are chemically inert, stain resistant and have lower permeability to moisture and gases than conventional polyethylene.

*T. M.

Write for full-color catalog, samples and prices.

LERMER PLASTICS, INC.

502 SOUTH AVENUE, GARWOOD, NEW JERSEY

PIONEERS AND SPECIALISTS IN PLASTIC CONTAINERS SINCE 1919

U.S.I. POLYETHYLENE NEWS

A series of advertisements for plastics and packaging executives by the makers of PETROTHENE® polyethylene resins

Packaging Notes

Polyethylene handles for multi-trip refillable milk bottles as well as one-trip carriers for multi-unit packs of cans, bottles or jars, are now on the market.

Milk bottle handle

The milk bottle handles make half-gallon and gallon bottles easier and safer to carry and use.

The molded polyethylene multi-unit carriers, which can be used for beer cans, soft drink bottles and various grocery and household products, have a number of advantages over conventional carriers. Those cited for beer cans, for example: savings of 1 cent per six-pack; high-speed application of carriers—up to 1200 cans per minute; faster cooling when refrigerated; instantaneous product identification; quick stacking; containers easily removed; carrier unaffected by moisture; carrier easily discarded.

Multi-unit one-trip carrier

Polyethylene drum liners on a roll—heat-sealed at intervals and perforated just above the seal—have increased speed of lining corrugated cartons and drums threefold for one manufacturer. In the past, static electricity made the mouths of individual bags difficult to open; now, the tearing off action opens liners automatically. Photo shows workman pulling liner over mandril with one hand, while tearing it off roll overhead with the other. He'll simply flip both into drum, "cuff" the liner and remove the mandril.

Photo courtesy Bemis Bro. Bag Co.

Polyethylene bags in roll form have recently been introduced which will provide housewives with convenient containers for storing foods and other household items.

The prefabricated bags are packaged 25 to a roll in cartons similar to those used for waxed paper.

U.S.I. Introduces New PETROTHENE® Resin for Cast Film Extrusion

Produces "Soft Feel" Film of Exceptional Clarity and Gloss, High Stiffness

U.S.I. has developed a new 0.933 density polyethylene resin designed for cast film extrusion applications. The new resin — PETROTHENE 218 — has excellent processing characteristics and produces cast film with properties particularly suited to overwrapping soft goods, bakery products or paper.

Cast polyethylene film is an ideal packaging material for a virtually limitless number of consumer products.

Ultra-clarity is a key characteristic of cast film made from PETROTHENE 218. In transmittance and gloss, it equals or surpasses any other polyethylene film in the field. Haze is very low. Moreover, the film is easy to handle on overwrap equipment because of its high stiffness and good heat sealing properties.

For bakery goods, film made from PETROTHENE 218 is ideal. Its "soft feel" imparts a feeling of warmth and freshness, while its natural moisture barrier keeps products fresh longer. Clothing, too, takes on a soft-to-the-touch appearance not possible with "hard finish" overwrap materials.

Easy To Process

The new resin has a density of 0.933 and a melt index of 3.0. Its melt flow and hot-melt extensibility characteristics are excellent, permitting high haul-off rate (>200 ft/min) and relatively thin-gauge films (0.5 mil).

Extrusion stock temperatures of 450° to 550°F and casting roll temperatures of 80° to 170°F have been successfully used. Normally, of course, the highest stock and casting roll temperatures possible under given operating conditions will result in best-quality film.

Printability of films cast from PETROTHENE 218 is excellent. Film has been treated for printability in line with the extrusion process at rates of over 150 ft/min. With a moderate treat level, excellent ink adhesion has been obtained.

The resin is available in three formulations with varying slip levels: unmodified PETROTHENE 218, no slip; 218-26, medium-low slip; 218-27, medium slip.

Polyethylene-Lined Pails Now Used For Shipping Chemicals

Seamless blown-in-one-piece polyethylene liners for steel pails have been developed as another advance in solving the problem of safe and economical packaging of corrosive liquids. This container is expected to find wide application in packaging and shipping products such as acids and alkalies, food concentrates, photographic chemicals, electrochemicals and insecticides.

One-piece polyethylene liner insert permits use of steel pails for shipment of corrosive chemicals. (Photo courtesy Jones & Laughlin Steel Corp.)

The liner is blow-molded of polyethylene in the same manner as a "squeeze bottle," and is then attached to the cover of the outer steel container at the pouring opening, before it is inserted in the container. Its one-piece construction is said to insure against leakage and product contamination.

New Help in Selecting Best Polyethylene Film to Use

A revised edition of the 4-page brochure, *Which Polyethylene Film Should I Use*, incorporating the new Commercial Standard CS227-59 for Polyethylene Film has just been issued by U.S.I. The brochure lists film requirements and resin types suggested for 33 classes of packaged goods, in the terminology used in the new Commercial Standard.

The new U.S.I. brochure provides extruders with an easy-to-use reference to the principal applications of polyethylene film as defined in the new Standard and suggests applicable PETROTHENE resins for these uses. Copies may be obtained by writing to Technical Literature Department, U.S. Industrial Chemicals Co., 99 Park Ave., New York 16, New York.

Cast 1.25 mil polyethylene film from regular production run using PETROTHENE 218 resin.

SELL MORE ON SIGHT... AND SAVE WITH CAST POLYETHYLENE OVERWRAP

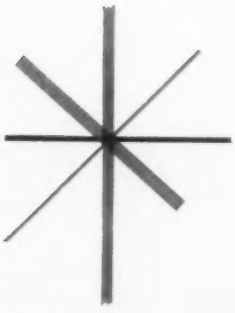
Whether your product is bread or Bermuda shorts, cast polyethylene makes it look better . . . feel softer . . . sell faster.

Cast polyethylene film is crystal-clear, with a high gloss and no hint of haze. No other polyethylene film comes near it in clarity and gloss . . . no other transparent overwrap surpasses it . . . no other material can give your product more sales-spurring sparkle. Easy to print in any color, its glossy surface adds luster and appeal to printed art and lettering.

After cast polyethylene packaging has caught a customer's eye, it keeps on selling with its "soft feel". Unlike "hard finish" overwraps, it imparts a feeling of softness to clothing . . . a feeling of warmth and freshness to bakery products. And with polyethylene's traditional strength and moisture resistance, cast polyethylene keeps products fresh and fresh-looking . . . clean and salable despite rough handling.

Cast polyethylene overwrap saves you money in your packaging operations too. There are no special production problems. It heat seals well, and handles easily on overwrap equipment designed or modified to handle polyethylene film. It is the least expensive transparent overwrap material you can buy. Cast polyethylene film is made by a special process from U.S.I.'s PETROTHENE® resins. Ask your supplier to check into U.S.I.'s latest development – PETROTHENE 218 resin, designed for cast film overwrapping of soft goods, bakery products or paper. It is exceptional in clarity, gloss, softness and ease of handling. U.S.I.'s technical service engineers will be glad to work with him in putting it to work for you.

U.S.I. INDUSTRIAL CHEMICALS CO.
Division of National Distillers and Chemical Corp.
99 Park Ave., New York 16, N. Y.
Branches in principal cities



Better labeling...less work ...the HEAT SEAL way!

Labels by Steigerwald

Fine labels of all kinds at reasonable cost

Heat Seal requires no glue, no water, no clean-up. Ideal for bag headers and containers of practically all shapes and materials. Instantaneous or delayed action. Made to exact specifications, for use with high speed equipment. Continuous rolls or individual.

Send your present labels for redesign, without charge or obligation, or for estimate on printing in present form. A. M. Steigerwald Company, 910 West Van Buren Street, Chicago 7. Taylor 9-5400.

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Bramble 1-0222

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Harry W. Hogg
20157 Greeley Ave.
Diamond 1-3848

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319 Jefferson St.
Juniper 7-1257

CLEVELAND 21, O.
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4040 Mayfield Rd.
EVergreen 2-7555

KANSAS CITY 5, MO.
A. B. Mason
905 Jefferson St.
Victor 2-6580

MILWAUKEE, WIS.
H. C. Lackowski
P.O. Box 62—Rt. No. 1
Garden 5-5850

MINNEAPOLIS, MINN.
J. E. & J. L. Moor
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Taylor 4-5309

ROCKFORD, ILL.
Blackhawk Paper & Cordage
630 Cedar St.
4-5261

NEW YORK 25, N. Y.
John H. McLaren
500 West 111th St.
Monument 2-0237

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Marvin Yates Co.
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Parkview 6-0296

DAYTON 6, OHIO
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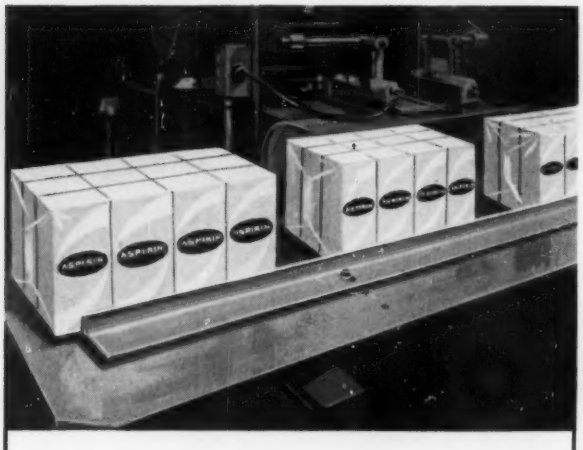
GOLD OR SILVER EMBOSSED • DIE-CUT OR SQUARE • FOIL SEALS AND TAGS • FLAT OR CONTINUOUS ROLLS
FOR HAND OR AUTOMATIC USE • HEAT SEAL • PRESSURE SENSITIVE • SPECIAL ADHESIVES

Bundle your AVISCO®



to save money

Manufacturers of products as varied as drugs, cigars, cosmetics, candy, razor blades and camera film are saving money by bundling with Avisco cellophane. It eliminates the need for printed or labeled boxes and paper overwraps; operates more efficiently on wrapping machines; seals quickly and securely with heat, thus ending the gluing operation. Cellophane offers new packaging flexibility over boxes because bundle sizes can be changed simply by adjusting the machines. It also reduces shipping carton sizes, shipping weights, and warehouse space needed to store packaging materials.

to help your distributors

Any distributor who ships products to retail outlets recognizes bundling as a source of operational savings. But his savings are even greater when Avisco cellophane is used for this purpose. Taking inventory and making up orders become easier with bundles in Avisco cellophane. Its pure transparency permits product visibility from the top, bottom and all 4 sides of the bundle. The results are instant identification, faster count and reduced shipping errors. And nothing compares with cellophane for sealing in freshness and protection against dust, dirt and moisture. This means longer shelf life.

AMERICAN VISCOSE CORPORATION, FILM DIVISION, 1617 PENNSYLVANIA BOULEVARD, PHILADELPHIA 3, PENNSYLVANIA

fraction-of-case units in **CELLOPHANE**

to help your retailers

Retailers benefit in many ways when they receive fraction-of-case units bundled in Avisco cellophane. Bundles of a product can be conveniently stored next to individual packages remaining on the shelf. Retailers can see at a glance how much stock they have and what needs to be ordered. They can use the bundles as shelf displays without unwrapping. Cellophane bundling also facilitates mass displays during special promotions. In some instances it has even helped retailers sell entire bundled quantities to consumers. It also eliminates disposal problems caused by bulky cartons and wraps.

to help yourself

Learn more about this new and better method of redistribution packaging. Send for our booklet, "Cellophane Bundling". Better still, phone or write us for an appointment with our representative in your area or a selected cellophane converter specializing in your field. Our complete packaging service is available to assist you and demonstrate how Avisco cellophane, plain or printed, will answer your requirements better and more economically than any other packaging material.

Look to AVISCO® fibers and packaging films for new ideas

AVISCO

SALES OFFICES ALSO LOCATED IN ATLANTA, BOSTON, CHICAGO, DALLAS, LOS ANGELES AND NEW YORK

Manufacturers of consumer products using container caps know that BEETLE® plastic has never failed them in twenty-five years of steady use. Even perfume esters and acetone solvents make no headway against molded BEETLE urea. On the shelf, BEETLE closures won't build up electrostatic charges that attract unsightly dust. And they hold firm and tight during shipment and storage. BEETLE comes in any color, can be molded in practically any shape, to fit any design. Keep your customers happy and content by specifying BEETLE plastic caps every time.

CYANAMID AMERICAN CYANAMID COMPANY • PLASTICS AND RESINS DIVISION

30 ROCKEFELLER PLAZA, N. Y. 20, N. Y. • OFFICES IN: BOSTON • CHARLOTTE • CHICAGO • CINCINNATI • CLEVELAND • DALLAS • DETROIT • LOS ANGELES MINNEAPOLIS • NEW YORK • OAKLAND • PHILADELPHIA • ST. LOUIS • SEATTLE • IN CANADA: CYANAMID OF CANADA LIMITED, MONTREAL AND TORONTO

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Editorial Memo

No time for tranquilizers

Having stirred up a storm in the food-packaging field a year ago by insisting until the very last minute that the Food Additives Amendment of 1958 would be enforced to the letter—then staging a hastily organized retreat—the Food & Drug Administration appears now to be engaged in a curious, and dangerous, diversion.

The official line now emanating from F&DA headquarters seems to be that there was really nothing to get excited about in the first place, that everything is calm now and just don't worry too much about the future. This was the burden of Deputy Commissioner John L. Harvey's recent address to TAPPI, pointedly entitled "The Seas Grow Calmer."

"I really believe," said Commissioner Harvey, "that much of the insecurity and feeling of uneasiness which was so manifest last year was basically the result of misinformation and misunderstanding."

Well, let's have no more misinformation or misunderstanding. And as a first step in that direction we suggest that F&DA cease calming the seas and turn its attention to the hard facts of the situation—from which the law this time gives no escape.

► It is a fact that some 450 of the 650 chemicals important to packaging have not yet been cleared, but are merely continuing under the blanket of "extensions" that was hastily applied last March 6. The list, which, incidentally, includes such materials as polyethylene, waxes and some can liners, remains essentially unchanged.

► It is a fact that, under the law, time will run out on these extensions on March 6, 1961. The law does not make provision for any further extension of time under any circumstances.

It is true that many of these extended chemicals can be pushed into the "generally recognized as safe" category—if and as F&DA is prepared to vouch for agreement of the experts to this effect. But it would be extremely hazardous to count on this. Virtually no progress in that direction has been made in the last five months.

And almost nothing has been said about the new materials—those that have come into use since Jan. 1, 1958. Under the 1958 law they are technically illegal now and cannot be sanctioned until their safety has been proved and certified by F&DA. So far only one new material—polypropylene resin—has thus been certified and it required 31 months of all-out effort by a big company using ingenious methods to shorten the length of time required for the testing procedure. (For the details of that story, see p. 106 of this issue.)

It's time for a forthright statement from F&DA telling packagers what to expect and what they may do to help themselves in the seven months that remain before the day of reckoning. If the situation is impossible, let's face it now and go to Congress for new legislation.

The Editors

Modern Packaging, Executive and Editorial Offices, 575 Madison Avenue, New York 22, N. Y. Teletype: TWX-NY 1-3063. Cable address: "Breskinpub."

From Nashua's talent with paper and packaging . . .
new products that do more for you . . .

Nashua's new Peelac* peelable box tape makes possible a truly easy-open carton

Nashua's new Peelac peelable box tape is good news for shippers. An easy pull . . . and shipping containers are open. No knife damage to contents! No need for pull-tab devices. And Peelac makes possible a wide variety of container designs — including cartons that can double as store displays, or trays for shelf display.

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August 1960 Vol. 33 No. 12 MODERN PACKAGING

What's happening to cellophane?

The answer is: plenty. It's still growing and bigger than all other packaging films combined, because of development strategy that capitalizes on its own strong points and hits at the weaknesses of lower-cost plastic competitors

Exacting research *probes the natural properties of cellophane and develops new functional properties through coatings and laminations. Here, a cellophane bag is seen as it undergoes a burst test.*

PHOTO COURTESY AVISCO

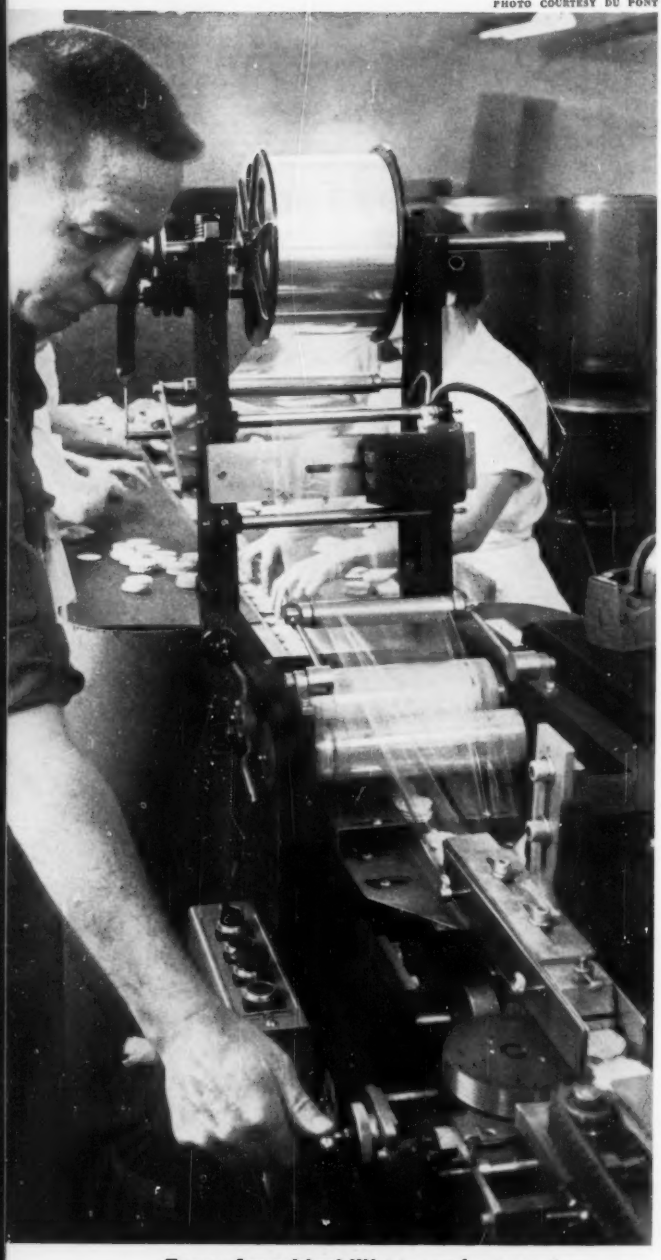
It's an odd situation when cellophane manufacturers, who sold nearly half a billion pounds of film to the packaging field in 1959, must ask themselves, "What's ahead for cellophane?" Yet, they have not only been seriously concerned with this question, but for the last five years—even while cellophane was still on allocation and steadily increasing in both production and sales—have spent increasing millions on research to guarantee a positive answer.

The answer: Improved cellophanes are striking out into new areas of protective function, where they sell on the basis of performance rather than price. At the same time, new high-yield, economy cellophanes are fighting for the lowest-price bag and overwrap field, where plain, 1-mil polyethylene film now has a one-third-lower price advantage.

But the area in which price alone is a determining factor is relatively small. It's been four years since polyethylene displaced cellophane as the lowest-priced transparent film[1] and the price gap has widened. Yet cellophane sales have continued to grow. Against cellophane's record 436 million

[1] See "What About Polyethylene?" MODERN PACKAGING, Dec., 1957, Jan. and Feb., 1958.

PHOTO COURTESY DU PONT



Ease of machinability *is an advantage of cellophane-based films that is hard to beat.*

pounds last year, polyethylene sold a record 250 million pounds for packaging. But polyethylene and all other plastic films combined were still less than three-quarters of the mounting cellophane total.

If polyethylene—with its generally greater impact strength and longer life—were completely interchangeable with cellophane, the story might be different. But the fact is that no film today can match cellophane in the speed and economy of printing and machining. The difference in converting cost can easily wipe out the original price advantage of polyethylene.

This is not to ignore polyethylene's great gains (actually a greater gain in poundage last year than that of cellophane) nor its promising future. But has cellophane, the old standby, perhaps been overlooked in the rush of interest to the rising new material? If that is the case, this article will serve to set the record straight.

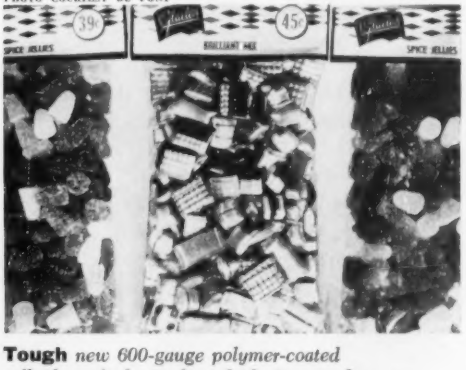
At the moment, cellophane still equals or betters other packaging films in the merchandising advantages of transparency and surface gloss; in the production assets of easy and high-speed handling and sealing, and in the numerous design and marketing services that its manufacturers offer.

But, more significant for its future, cellophane is also an ideal substrate for a wide variety of functional, high-barrier protective or heat-sealing coatings and laminations. Its adaptability to broad or specific applications is proved by the choice of some 100 types of cellophane now on the market.

Of course, these advantages are not unchallengeable. The newer thermoplastics—notably polyethylene—not only have risen rapidly in volume, but have duplicated or approached some of the merchandising and technical properties of cellophane—and this very often at a lower cost.

Cellophane's new strategy:

PHOTO COURTESY DU PONT



Tough *new 600-gauge polymer-coated cellophane looks fresh-packed after weeks on the grocery shelf. Note excellent clarity.*

Because of its strength, polyethylene has swept the field of bag packaging, especially for such heavy goods as fruits and vegetables[2]. It also dominates overwrap and bag packaging for such items as textiles[3], hardware and paper products that do not require a barrier package. For special reasons, it is now catching on in bread wrapping[4] and—with improved transparency and gloss—threatens to move into merchandising applications for foods and nonfoods that have traditionally utilized only cellophane. Its durability over a longer shelf life is an important asset for polyethylene as a packaging film.

A future in specialization

To offset these incursions by new materials, the cellophane industry sees its material being cast in a new and exciting packaging role with promise of a great potential—that of a specialized protective material designed to give maximum protection and preservation to a particular product or to selected types of goods.

Cellophane has a natural advantage in these important applications. For while it can be argued, in general, that the water-vapor-transmission rates of polyethylene and cellophane at normal temperatures are approximately equal, cellophane has a clear edge as a barrier to the transmission of oxygen, greases and flavors—an edge that is tremendously increased by the addition of very thin coatings of various thermoplastic resins, and even specially coated cellophanes retain the basic film's advantage of lower converting costs.

Though these facts would seem to indicate that cellophane might be forced out of the broad bagging and wrapping fields where specialized and costly barrier properties or sophisticated printing techniques are not needed, this is not now likely.

Technical advances

Cellophane sales have steadily risen from about 265 million pounds in 1950 to the estimated 436 million pounds in 1959—up 33 million pounds in the last year. Despite the relatively faster rise of polyethylene (up 75 million pounds in the last year, which includes an estimated 30 million pounds for dry-cleaner bags), cellophane still holds 59% of the packaging-film market, as against 34% for polyethylene. If 1959 estimates are correct, "all other" plastic films actually declined 5 million pounds from '58 to '59, so it appears that some of polyethylene film's growth has been at the expense of films other than cellophane.

No less than 31 new types of cellophane film for packaging, introduced during the past three years, have contributed markedly to holding its position. Cellophane industry sources are now so confident of continued growth that they predict annual sales of cellophane will reach 600 million pounds by 1970. They look to the research laboratories—one of which is testing 17 new films at this time—to provide further functional improvement in cellophane to make such growth possible.

To this end, the research efforts of the three cellophane manufacturers today are being directed along three broad fronts:

1. New coatings are being developed that are aimed at yielding immediate improvements in strength, barrier properties or the controlled transmission of gases and water vapor.

2. New substrates are being investigated in a long-range program that will involve major changes

[2] See "Upturn in Pre-Packaging," Modern Packaging, July, 1960, p. 89.
[3] See "Bagging Sweeps the Textile Field," Modern Packaging, July, 1960, p. 118.
[4] See "Trend to Films for Bread," Modern Packaging, April, 1960, p. 94.

shoot at specific film-protection problems

PHOTO COURTESY DU PONT

Controlled permeability *is exemplified by cellophane that keeps dry crust on bread, rolls.*

PHOTO COURTESY AVISCO

Barrier *properties of polymer-coated cellophane protect macaroons.*

PHOTO COURTESY DU PONT

Polymer coating *qualifies cellophane as bag liner for cake mix.*

PHOTO COURTESY AVISCO

Puncture-resistant *polymer-coated cellophane resists abrasive salt particles.*

in the basic cellulose sheet—producing thinner, tougher films that, it is hoped, will compete favorably with polyethylene in economy.

3. Broadened applications in such packaging fields as bundling and other multi-unit packaging, fractional and portion packs and package linings are being encouraged to open up new markets particularly suited to cellophane's machinability.

New coatings

Advanced cellophane coatings make use, paradoxically, of the very thermoplastic resins with which cellophane itself competes. Saran-like coatings, in particular, have been employed for high barrier properties, sealability and stability in the dozen "polymer-coated" cellophanes that have achieved widespread use in food packaging during the last two years. Polyethylene, too, is now used as a coating for several cellophanes, to enhance both strength and sealability. Test films reportedly in the works will employ coatings of such other special resins as polyamides, polyesters and vinyls.

The polymer-coated films, designed initially for dried fruits and for fresh baked goods with high fat content, have multiplied in both type and application and are now used for such diverse products as crackers, nuts, candy, meats and fresh produce—where durability in the presence of moisture and fats, non-fogging and long shelf life are essential. These films exemplify the tailoring of cellophane for specific protective properties. They represent the most important new class of cellophanes today—one which may eventually be bigger than the standard "MS" type of film.

Effective combinations

Of extreme importance is the growing use of cellophane in combination packaging materials—

Cost comparison of common films

Material (1-mil or equivalent)	*Cost (per 1,000 sq. in.)*
Cellophane, 300—MS-52 & 2	$0.032
Cellophane, 300—MSA	0.035
Pliofilm	0.033
Polyethylene (low-density)	0.019
Polystyrene	0.024
Saran	0.066
Vinyl (cast)	0.040

Among the new special-purpose cellophanes, tailor-made for problem products

FUNCTIONAL OBJECTIVES	DESIGNATIONS*	TECHNICAL TREATMENT	SPECIFIC PACKAGING TARGETS	COST (PER 1,000 SQ. IN.)
High yield	300—MS-10, Avisco 300—MSD-60, Du Pont 300—MST-44, Olin	Improvements in manufacturing and coating.	Direct wrap for bread and other bakery products containing grease. Tray and small-carton overwraps.	$0.0295
Toughness and durability	600—RS, Avisco	Polyvinylidene chloride coating.	Wraps or bags for heavy or sharp food items such as cookies, crackers, pretzels, nuts and candies. Also textiles and hardware.	0.070 to 0.0825
	450—T-69, Avisco	Cellophane-polyethylene-cellophane lamination with two-side nitrocellulose coating.		
	600—K-600, Du Pont	Cellophane-cellophane lamination with polyvinylidene chloride coating.		
High barrier	450—T-79, Avisco	Cellophane-polyethylene-cellophane lamination with two-side polyvinylidene chloride coating.	Bags or wraps for cookies, crackers, pretzels and processed meats.	0.0785
Controlled permeability	300—REO, Avisco 300—MSAD-90, Du Pont	Polyethylene coating.	Direct and tray overwraps for fresh produce and red meats.	0.0318 to 0.0433
	300—OF-16, Olin 300—LST, Olin	Nitrocellulose coating.		
Chemical resistance	300—RS-1 & 2, Avisco 450—RS-2, Avisco 300—K-201, 202 & 203, Du Pont 450—K-202 & 203, Du Pont 300—OX-513, Olin 450—OX-511, Olin	Polyvinylidene chloride coating.	Direct wraps and bags for foods containing high levels of grease, oils, salt and sugar, such as cakes, cookies, dried fruits, nut meats, potato chips and candies.	0.0376 to 0.0564

*Note: The films identified in this column fall in the general category indicated, although they are not represented as identical and may also excel in one or more of the other functional properties.

PHOTO COURTESY OLIN

Evaluation laboratories *of major cellophane producers are working day and night to find the protective applications which special cellophanes can handle better than any other film available for use in packaging.*

converter-made laminations of cellophane with saran, polyethylene or vinyl films and extrusion coatings or combinations of cellophane with plastic materials, foil or paper. Used for vacuum- or gas-packed meats and cheese, flexible packaging of liquids, bagged coffee, pouch-packed powders and other products that need extra-strong protection, these laminations utilize the basic barrier properties, inertness, flexibility, strength and often the transparency of cellophane to maximum advantage.

Still other functional and cost-saving advances have been achieved by three new films which combine two thermoplastics and two thin layers of cellophane. These films are, significantly, being produced right in the cellophane plants themselves rather than in converter operations.

Two of these new cellophanes (both American Viscose) are composed of ½-mil webs bonded together with a thin extrusion of low-density polyethylene; one is further coated with a saran-type polymer on the outside, the other with a nitrocellulose lacquer. Measuring 450 gauge in total thickness, these materials are said to be highly practical wherever long shelf life and resistance to breakage are needed in high-barrier bag applications. They are also reported to provide a greater barrier to gas and lower water-vapor transmission (particularly at crease points). In addition, they are reported to be much stronger and to have better aging and low-temperature storage properties.

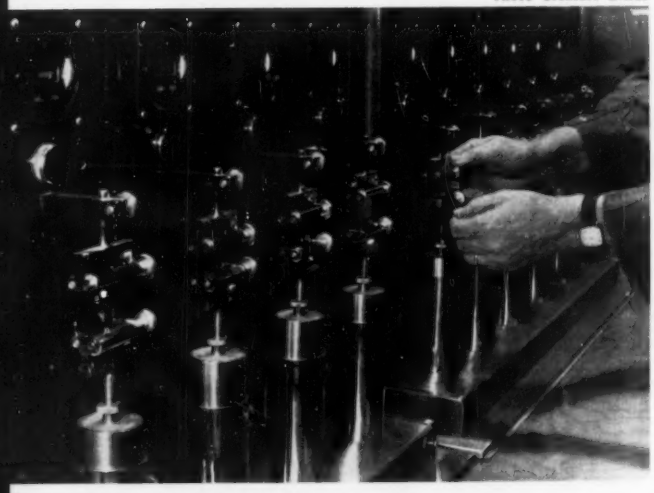
In laboratory tests by the manufacturer designed to measure toughness, these two new multi-layer films reportedly surpassed conventional MS cellophane and even the polymer-coated films in their resistance to puncture, impact and flexing, particularly in the low-temperature range.

In tumble tests, bags made from the laminates lasted slightly longer than bags made from conventional 300-gauge lacquered and polymer-coated films at 75 deg. F. and about 69% longer at minus

20 deg. F. In flexing tests, the new films are reported to have stood up at least 300% better at both 75 deg. F. and minus 20 deg. F. than did the 450-gauge lacquer- and polymer-coated cellophanes.

First commercial use of the new polymer-coated laminate has been in a high-barrier cookie bag for macaroons, marketed by Jack's Cookie Co., Baton Rouge. The lacquer-coated film achieved first application in a tough, saddle-labeled bag for Bavarian-style pretzels by Anderson Pretzel Bakeries, Inc., Lancaster, Pa. The macaroon package is said to resist extremely high humidity and has won wide distribution in major Southern markets. Resistance to puncture, long shelf life and prevention of water-vapor transmission are features

PHOTO COURTESY AVISCO



Heat sealability *of cellophane is an important packaging factor, made more critical by the variety of coating materials now in use. This special adaptation of a standard tensile-strength tester gauges the strength of the bond between two heat-sealed strips of a new coated cellophane.*

of the bag for the specialty pretzels, which are coated with sharp and abrasive grains of rock salt.

Even heavier manufacturer-made laminations are possible, however, as demonstrated by the third new film type (Du Pont and American Viscose), a combination of two 300-gauge cellophane webs bonded with undisclosed adhesives. These films also have a polymer coating for heat sealing and added barrier properties. Measuring 600 gauge, these heavy films are reportedly strong enough for 2-lb. bags of cookies and candies—packages that until now required expensive double-wall structures of polymer-coated or conventional 300-gauge MS cellophane. They also are said to afford superior barrier protection and better aging properties while maintaining the usual high standards of cellophane clarity as well as of surface sparkle.

A pioneer user of one material (Du Pont) is the Glade Candy Co., Salt Lake City. Marketing in 16 western states where the humidity averages about 15%, this firm reports that it had trouble with conventional cellophane bags made from 300-gauge double-wall and 450-gauge single-wall films. Lightweight polymer-coated films lacked the desired rigidity and shelf life for the broad range of candies and bag sizes employed by the company. The new 600-gauge film completely fills the bill, according to Glade. After being on store shelves for almost two weeks, the bags retained a "moist," fresh feel.

Additives

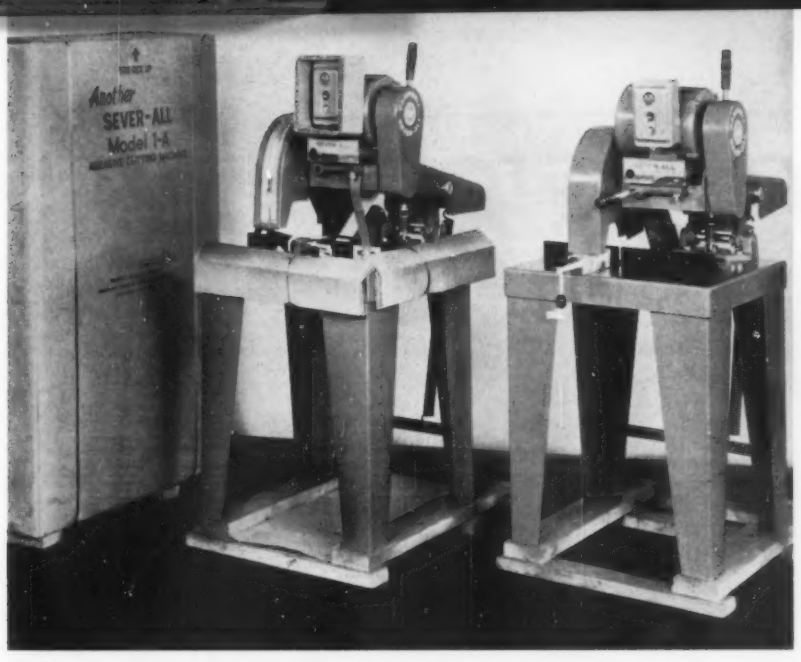
New barrier properties have been achieved with chemical additives, too. One recent cellophane (Olin) employs anti-oxidants, applied to both sides of the base sheet in the film coating to retard oxidative rancidity in such high-fat products as potato chips, popcorn, cookies, crackers and other snack items. In packages of these products, a thin layer of oil usually transfers to the film surface. The sealed-in anti-oxidant retards deterioration of this oil and thus boosts shelf life of the product.

Controlled permeability—the selective transmission of water vapor or oxygen—has been the subject of particular development to provide the proper protection for fresh produce, red meats and specialty breads. Two years ago, three new films with either polyethylene or nitrocellulose coatings achieved a new level of efficiency in the transmission of oxygen to fresh meats to preserve the fresh, red color, while retarding moisture loss to prevent shrinkage. Now another new cellophane (Du Pont) has been introduced for hard-crust breads and rolls, permitting relatively free flow of water vapor and preventing these bakery products as well as some kinds of doughnuts from becoming soggy.

New substrates

No major modifications have been made in the basic cellophane sheet since it was introduced 35 years ago. But this will soon change, according to industry researchers. Now being actively investigated are irradiation and catalytic techniques for cross linking or grafting plastic polymers to the cellulose molecules. Such techniques may produce much tougher and more stable films at thinner gauges, though experts differ in their opinions on the commercial feasibility of these methods.

Changes in mechanical manufacturing procedures can also be employed to [*Continued on page 192*]



Three steps *in packaging 450-lb. unit in triple-wall corrugated shipper. At right, pre-bolted wooden skid facilitates handling of unit during assembly. Center, protruding and sensitive parts are removed and taped in corrugated to table top or framed in corrugated; bottom dust cover is stapled to skid. At left, shipper is put over machine and steel strapped. Rigidity of shipper permits two-high stacking of containers.*

Rigid triple-wall shipper

To protect machine from dust, weather and breakage, Allison-Campbell houses it in steel-strapped, three-ply corrugated so strong that these 450-lb. units can be stacked in two tiers to save space

Out of the inherent strength and rigidity of triple-wall corrugated, steel strapped to a wooden skid, a manufacturer of heavy industrial equipment has fashioned a shipper for an abrasive cutting machine that is said to:

1. Protect the machine from dust, grime, corrosion and breakage better than other shippers.
2. Facilitate handling during manufacture because the skid is applied prior to assembly.
3. Halve warehouse space by permitting two-tier, fork-lift stacking of these 450-lb. machines.
4. Provide maximum space on the shipper walls for product identification and other data.

Not all of these advantages are peculiar to triple-wall corrugated, of course, but when the packager, the American Chain & Cable Co.'s Allison-Campbell Div., Bridgeport, Conn., added them up it selected this shipper for its Sever-All Abrasive line of industrial cut-off machines.

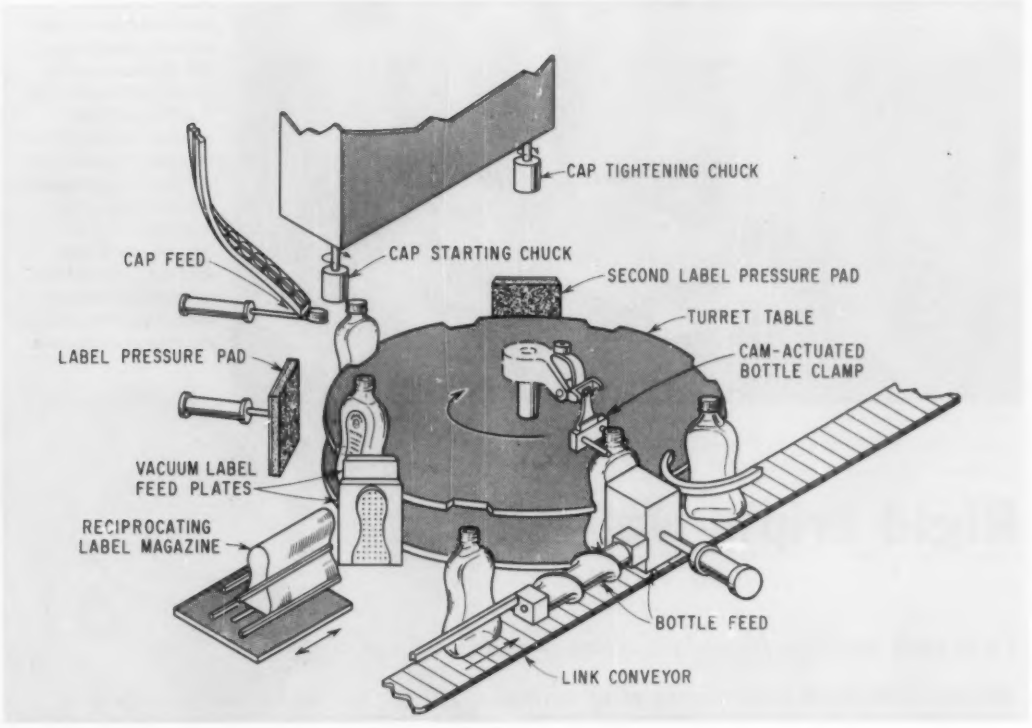
Faced with the problem of getting off on the right foot in protecting this new item in the Allison-Campbell line, company packaging engineers noted that weathering, corrosion and breakage of poorly packaged products, particularly heavy machinery, have reportedly cost American industry millions of dollars in lost time and prestige. Other shipper constructions were tried and eliminated because of lack of protection and weakness of side walls.

At the start of assembly, a wooden skid is bolted to the four feet of each bare machine table, eliminating the need for lifting the entire machine to install skids after assembly. Prior to packaging, an operating handle, work-clamp handle and wheel-flange wrench are removed and taped to the work table, protective braces are installed, corrugated pads are affixed to sensitive parts and a bottom dust cover of corrugated board is stapled atop the skid. The shipper is then steel strapped.

Allison-Campbell reports that this shipper cuts costs and gives maximum product protection.

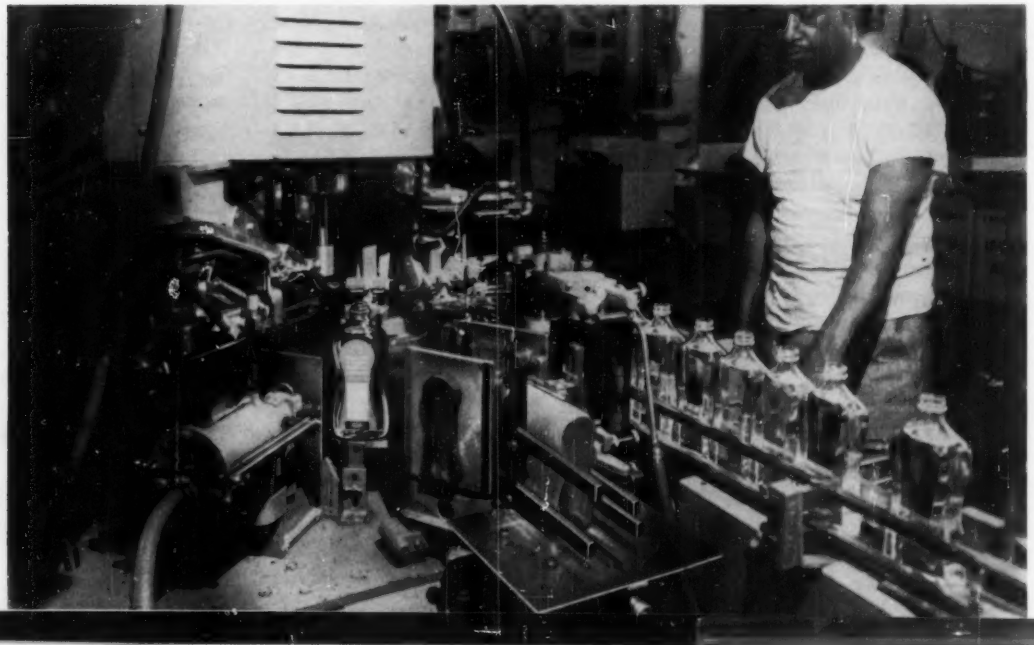
SUPPLIES AND SERVICES: Corrugated shippers by Tri-Wall Containers, 799 Washington St., New York 14. Steel strapping by Signode Steel Strapping Co., 2600 N. Western Ave., Chicago 47.

ONE-STOP LABELING



All key steps *in operation of new labeler-capper are indicated in this isometric sketch. Only appropriate stations are illustrated in order to emphasize the most important mechanical action. On turret of machine itself, for instance, there are eight bottle clamps instead of only one as shown here.*

In first step *of combined labeling and capping operation, bottles are screw fed from file at right. From horizontal label magazine (center), individual labels are picked off by suction through perforated rubber pad on the counter-clockwise revolving head (also center), brushed against vertical cold-glue roll and applied to bottle moving clockwise. Air-operated piston (left) applies pressure to label while metal cap (chute fed from above) is affixed by means of a magnetized chuck.*



AND CAPPING

In same space as a turret-type labeler alone, new integrated machine with fast size change-over applies label and closure at same time, doubling rate of drug bottling at Dr. Sachs Laboratories with 63% less labor

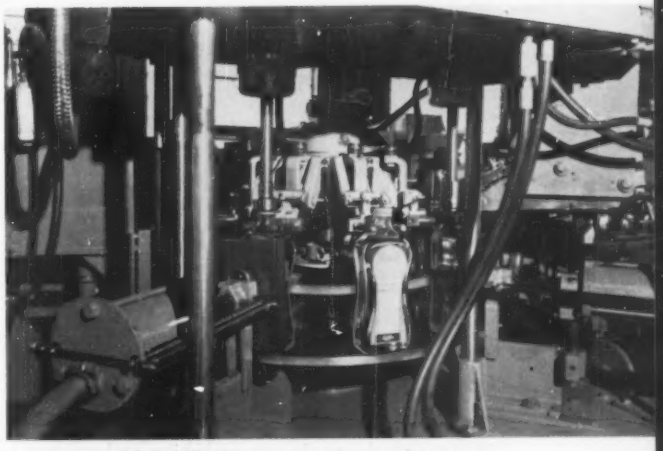
The first known machine to combine labeling and capping of glass bottles in an integrated, one-stop unit is now in operation at Dr. Sachs Laboratories, Chicago. In view of the current emphasis everywhere on more efficient use of packaging-line space, the development may be significant.

This medium-sized drug-product manufacturer (28 employees) installed the new machine primarily for packaging its fastest-selling items. These include 100-tablet aspirin bottles, peroxide in 4-, 8- and 16-oz. round bottles, alcohol in round, pinch and "Mae West" pints, mineral oil in 6-oz. and pint sizes of both "shelf-line" and oval bottles. Other items will be added to the machine's duties as their volume growth warrants.

But right now the labeler-capper is operating with equal facility for 10 bottle and seven label sizes at an average speed of 60 bottles a minute. It is saving, Dr. Sachs says, some $25,000 yearly in packaging labor (only three line operators instead of eight—a personnel reduction of 63%) while allowing a production rate twice as fast as a former semi-automatic line.

Labeling on the Dr. Sachs machine is similar in operation to that of individual labeling units manufactured by the same supplier. Significant, however, is the way the two functions have been integrated. The combined unit takes little more floor space than a turret-type labeler alone, since one bottle-handling system serves both purposes. Key stations on the new labeler-capper, which is also a turret type, have been engineered to label and cap simultaneously so that separate stations are not necessary. This reduces change-over time sharply [*Continued on page 182*]

SUPPLIES AND SERVICES: "Pony Express" labeler-capper by New Jersey Machine Co., Hoboken, N. J. Die-cut labels of 60-lb. coated litho stock by Gugler Lithographing, 1339 N. Milwaukee Ave., Milwaukee 2. Bottles by Fairmount Glass Works, 1301 S. Keystone Ave., Indianapolis 7; Foster-Forbes Glass, Marion, Ind.; Knox Glass, Knox, Pa.; Owens-Illinois, Toledo 1, and Pierce Glass, Port Allegany, Pa. Caps by Armstrong Cork, Lancaster, Pa., and Desplaines Mfg., 2142 W. Fulton St., Chicago 12.



Final operation *as bottles move to left combines additional label pressure from second air-piston-operated pad (left) and cap tightening by second chuck (left center). Cap-starting chuck is at right center.*

Wide variety *of bottle and label sizes is handled on this equipment at Dr. Sachs Laboratories, Chicago. Change-over time for any of seven label sizes is 5 min.; complete change-over for any of 10 bottle sizes and appropriate labels is 25 min. Only two cap sizes are used.*

Economy in a plastic cup

Borden achieves paperboard cost with a thin-wall polystyrene container, made by a new pressure-forming technique, that gives 'non-commercial' look to packages for cottage-cheese products

A major change in the packaging and marketing of specialty dairy foods appears possible with the adoption by The Borden Co., New York, in selected markets of a strikingly new, colorful and low-cost polystyrene cup for its line of cottage-cheese products. Carrying product identification only on the polystyrene lid, this gracefully sculptured 16-oz. container achieves the "non-commercial look," which is becoming increasingly popular in the packaging of many home products,* reportedly at a cost competitive with conventional heavy-duty paperboard cups.

While premium plastic containers have been used in limited numbers for dairy products before, this appears to be the first serious assault by a plastic container—backed by favorable pricing and volume use by a major packager—on the 1.8-billion-unit market for heavy waxed-paperboard containers, now used primarily for the packaging of cottage cheese and kindred products. An additional packaging market of about 1.3 billion light-duty paperboard cups, mainly used for ice cream, is not expected to be affected by the polystyrene container because of a bigger cost differential.

The secret in the new plastic cup's combination of table-ready beauty and economy is a new pressure-forming technique for high-impact polystyrene sheet, worked out by the supplier, that produces a container with substantially thinner walls than heretofore possible in a molded-plastic container. This process enables weight of the cup to be cut 30 to 40% from previous injection-molded plastic cups.

Borden is now distributing its products in the new package in five areas: Madison (Wis.), Dayton, Milwaukee, Rock Island (Ill.) and Oakland. Results of the market surveys disclose the marketing advantage of the plastic container. Whereas 50% of the homemakers interviewed said they would serve dairy products from conventional containers at the family table, 79% said they would serve from the new plastic container. And though only 10% said they would use paper containers with guests present, 55% said they would set out the polystyrene cup.

Structural design features of the new cup were worked out by an industrial designer in close cooperation with packaging engineers from both the resin and container suppliers, to assure that the esthetic appeal of the plastic cup would be matched by strength and performance. The fluted petal design serves both styling and mechanical function. It provides identification with Borden, which uses a daisy as a trademark, and adds columnar strength and rigidity to the cup.

A rolled lip on the top rim of the cup, a unique

*See "The Non-Commercial Look," MODERN PACKAGING, Nov., 1957, p. 111.

Table-ready containers *with graceful, fluted design and rolled top rims use color functionally to denote different products in Borden line. Petal-like fluting increases plastic cup's columnar strength. Sole product identification is printed on lids (see photo opposite) which are discarded before serving.*

development of the container supplier, gives extra strength to the top of the container. A shoulder formed in the upper part of the cup permits empty containers to be nested without jamming.

A polystyrene lid was selected because, according to Borden, conventional metal lids increase the hazard of stress cracking in a polystyrene container and paper lids absorb moisture, resulting in improper fits. The special thermoformed polystyrene disk lid, which is flexible yet retains its dimensions, contains small projections that serve to vent the container, allowing trapped air to escape during capping and preventing the build-up of internal pressure during distribution. The lid is held firmly in place on the container by a formed flange that matches an undercut section in the cup.

Both cup and cap were constructed to meet demands by Borden that the plastic container must run on existing packaging lines. Only a few minor adjustments were necessary to adapt standard filling and capping equipment to the new package.

Functional use has been made of bright pastel colors—incorporated in the base plastic—to identify the different dairy products: blue denotes large-curd cottage cheese; yellow, small curd; green, vegetable-flavored specialties; pink, fruit-flavored specialties, and beige, a special dietetic salad. The opaque lids are flexographically printed with trademark and promotional copy.

Satisfied with initial sales results, Borden plans to push into additional markets, as existing stocks of paperboard containers are used up. Although the company plans no immediate use of the container for other specialty dairy products, the suppliers foresee broad applications for the lightweight polystyrene cap in the packaging of a variety of cheese, ice cream and other premium food products.

SUPPLIES AND SERVICES: Plastic cup and lid by Conex Div., Illinois Tool Works, Des Plaines, Ill., using Dow Chemical's "Styron 475B" high-impact polystyrene resin. Package design by Trombley, Pisani & Trombly, Birmingham, Mich.

Easy-open industrial carton

Industrial packagers, like their counterparts in the consumer field, are always on the lookout for ways to make shipping containers easier to open. Their aims are the same, too: customer convenience and elimination of product damage in the opening operation. Lewin-Mathes Co., St. Louis, has solved the problem simply by incorporating radial perforations in the upper face of its octagonal corrugated shipping carton for coiled flexible copper tubing.

The company developed the eight-sided container in 1950. Featuring a hand-hold opening in the center for carrying ease, the carton also offered storage-space economy because of its stackability. But, says the packager, the carton had one drawback: It was difficult to open. Cutting tools were required, which presented the possibility of scarring the contents. The ease-of-opening improvement was developed by Lewin-Mathes president Edward R. Schweich. Perforation lines on the new carton radiate from the center to each of its eight corners, forming six joined segments. The user merely tears back one or more segments to expose the coiled tubing. The carton can be re-used for storage. *Carton by Alton Box Board Co., Container Div., Highland, Ill.*

IDEAS

Caviar is 'pilferproofed' for supermarket selling

Romanoff Caviar Co., New York, opens the way to successful self-selection merchandising of its premium-priced gourmet product with an economical hang-or-stand blister pack. A combination of stretchable vinyl film and paperboard, it provides the package bulk necessary to discourage pilferage. Formerly, says the company, supermarkets shied away from handling caviar because its small glass container was easy prey for dishonest shoppers.

The Romanoff card package is a die-cut and printed folder with windows formed of 3-mil polyvinyl chloride. The film is attached to the entire surface of the flat card, so that two or more items can be packaged, as in the accompanying illustration. A newly developed automatic machine pre-forms the window or "pocket" which holds the caviar container, then (after product loading) folds the card over at the center line and effects a film-to-film electronic heat seal. No adhesive is needed. The sealed package then is subjected to a jet of hot air, which shrinks the film tightly around its contents. *"Stretch-Pak" and sealing machine by Inpak Systems, 114 E. 32 St., New York 16. Packaging by Downingtown Paper Box Co., Downingtown, Pa., using Goodyear Vitafilm.*

Space saver on retail shelves

Indicative of the efforts being made by packagers today to meet the demands of space-crowded retail stores is the design alteration which enables four cartons of Nutrena Mills' dog meal to be displayed in 22% less shelf space than before —without changing the size of the package. The solution devised for this Minneapolis-based firm was simply to switch the surface design on one facing panel of its 5-lb. carton from the conventional vertical position to the horizontal. Result: Two cartons can now be stacked on their sides on a standard shelf, thereby utilizing valuable space frontage that was wasted by the former carton.

A considerable bonus benefit achieved in the redesign is that the new horizontal facing offers substantially greater visibility than the old, a vital advantage in the constant struggle to capture the attention of busy supermarket shoppers. Making optimum use of the broader display area, both the Nutrena brand name and the company's trademark—a flop-eared puppy—have been enlarged for increased shelf impact. Type style of the brand name also has been changed from script to legible block lettering. *Carton by Waldorf Paper Products, 2250 Wabash Ave., St. Paul 14.*

IN ACTION

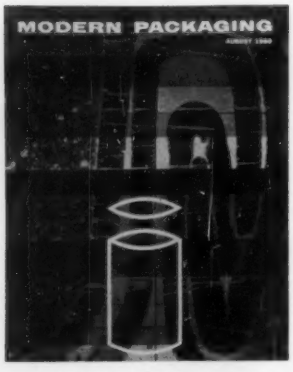
Dr. Pepper debuts in low-cost, non-returnable bottles

Dr. Pepper soft drink now makes its appearance in the same lightweight, ultra-thin, squat glass bottle which has become so prominent in the beer industry. It is now being introduced into West Coast markets, in multipacks of six 6-oz. bottles, by National Drinks Bottling Co., Gardena, Calif. The success of this development undoubtedly will be watched closely by other bottlers of soft drinks.

The new Dr. Pepper multipack incorporates one of the chief features which have been promoted for metal-can six-packs: no-deposit, throwaway convenience. In addition to the low-cost, non-returnable glass bottle, the company has adopted an economical, sleeve-type multipack carton. This combination enables the packager to offer the six-pack at the attractive retail price of 29 cents.

National Drinks Bottling Co. reports that additional packaging-cost economies have been achieved by loading and closing the new six-pack carton on specially developed, high-speed automatic machinery. *Bottles by Owens-Illinois, Toledo 1. "Jak-Et-Pak" paperboard carrier and automatic multipacking machine by Continental Can's Boxboard & Folding Carton Div., 536 Fifth Ave., New York 36.*

GREAT
PACKAGING
DISCOVERIES—17



THIS MONTH'S COVER

Artist Roy Kuhlman has used a photomicrograph of a can-seal cross section as background for his multi-layered color design.

CAN-SEALING

The discovery that made the 'tin can' what it is today came as a breakthrough after years of research involving both metal and rubber scientists

In 1919, Max Ams' sanitary open-top tinplate can for food had been in use for 29 years and was slowly replacing the hole-in-cap can, despite the fact that no one had achieved a truly satisfactory gastight seal between the can top and body. In that year, a great packaging discovery, responsible for the prodigious modern growth of the can industry, had its inception.

It took only three years after 1919 to resolve the can-sealing problem with the perfection of both solvent- and water-based sealing compounds that finally assured the success of the sanitary tinplate can and made possible the giant food-processing business that today utilizes 43 billion such containers every year. Perfection of these airtight seals also led to such modern canning innovations as the pressurized and vacuum coffee cans, the beer and soft-drink cans and the aerosol container—a mighty achievement for a little bit of rubber.

In the early days, canners had tried hand-cut rubber gaskets fitted into a groove in the can lids and bottoms and compressed against can bodies during "double-seaming" operations. Charles Ams, son of the can pioneer, improved this tedious technique by brushing on rubber dissolved in benzol solutions, then dusting the evaporated film with powdered asbestos.

Although many canners continued to work with solid rubber gaskets (and even cloth and paper disks), the rubber compounds emerged in the early 1900s as the most practical material. Many canners and can suppliers quickly devised their own formulations. Automatic machinery replaced the brush and, by the date this story begins, the solvent-based sealing compound was used widely.

The trouble was that benzol solutions were dangerously flammable as well as toxic to workers. The lack of control in compounding and applying these solutions was demonstrated by the explosion of many spoiled cans and by the quieter but also damaging processes of oxidati e spoilage and rusting, caused by air seeping through dried-out paper gaskets or imperfect solvent-based seals.

The time was ripe for a dramatic change in sealing techniques. It was soon forthcoming from basic research of the largest can-manufacturing company then in existence, American Can, backed up by a new chemical firm, Dewey & Almy, that staked its future on a better can-sealing compound. These two companies, working both together and separately, established basic latex compounds that solved the problem of toxicity and also served as a development bridge to modern rubber compounds.

Important steps were taken at the end of World War I by an ex-Army officer and chemist, Bradley Dewey, who found that better control of sealing compounds and a tighter can closure could be obtained by increasing the solids content of the gasket solution. Most solvent compounds then contained varying amounts of dissolved rubber, ranging from 0.5 to 4% solids, though additives had been used to increase solids.

Dewey devised a fine-milling process that enabled more rubber to be dissolved in benzol. The addition of resins and waxes increased total solids content. Before the end of 1919, Dewey was able to form a partnership—the Dewey & Almy Chemical Co., in Cambridge, Mass.—and market his first sealing compound, containing 8% solids.

Applied to lids by flowing on, the sealing compound formed a thick film that did not shrink when dry or pulp or tear when wet. Carefully handled, it maintained a can's full vacuum. Its eventual acceptance by the canning field outmoded the hole-in-cap can and all other types of separate gasket materials.

Then came U. S. Bureau of Health charges that the benzol solvent was toxic and a health and fire hazard in can plants.

Dewey & Almy and American Can worked separately on the problem. The

COMPOUNDS

best compound, it was apparent, would be one with a water base to eliminate both toxicity and fire hazards. But cured rubber is highly insoluble in water. Something had to be done to change this adverse physical fact.

Dewey, with the help of Ernest Hopkinson of U.S. Rubber, discovered that liquid latex with a solids content of 30% might be used as a sealing compound. But even though the idea was patented in 1922, both men agreed that liquid latex was too fluid for practical application. Two years later, Dewey and his chief chemist, Ernest Crocker, solved this problem with a new commercial sealing solution. Called "Gold Seal" compound, this colloidal dispersion of liquid latex was achieved by the addition of bentonite clay and karaya gum that contained the proper degree of plasticity and viscosity. Containing almost three times the amount of rubber solids in Dewey's original solvent-based compound, the new material was instantly adopted by a majority of can manufacturers. Together with high-speed machines devised to flow the compound onto can lids, it ushered in a boom period for the canning field.

Meanwhile, John R. Robinson, a researcher at American Can, was tackling the same problem of handling liquid latex. He also searched for additives and in 1926 discovered a combination of ammonium alginate and beeswax that not only proved commercially practical, but was easier to flow onto can lids on Canco's machines than was the Gold Seal compound.

But alginates—extracts of seaweed—were imported from Scandinavia and were difficult to get in quantity. Without hesitation, Canco perfected seaweed extraction and promptly built at San Diego the first full-scale alginate plant in this country. Not wishing to be in either the seaweed-extraction or sealing-compound businesses, however, Canco turned over the manufacture of its compound to Dewey & Almy, which supplied the can company's compound for several years, and sold the alginate plant to the Kelco Corp.

With improved processing techniques, it was eventually found that water-based compounds — despite their initial importance—lacked the resistance to steam and water needed in a sealing ring under modern high-pressure steam-sterilizing conditions. Meanwhile, petroleum refining had developed new odorless solvents, flammability of which is controlled by better processing techniques. Thus, a new series of solvent-type rubber can-seal compounds appeared in the early 1930s. They are now used for heat-processed goods, though water-based sealing gaskets are also employed in cans for other products.

Today there are available more than 80 types of flow-on sealing compounds whose rheological properties are varied to suit a great variety of can-lining applications and many different can-closing conditions.

PRINT COURTESY AMERICAN CAN

Hole-in-cap can *in old-time canneries required filling through large opening, soldering of separate disk, venting and finally soldering of tiny vent hole.*

SKETCH, AMERICAN CAN

First compounds, *in the early '20s, permitted the sealing of a one-piece lid. Sketched cross section of lid area shows seal position, basically unchanged today.*

CANS, CONTINENTAL CAN

Newest can *is ribbed for extra strength. Liquid latex sealing compound flows rapidly into narrow channel at lid edge, makes possible today's high-speed production.*

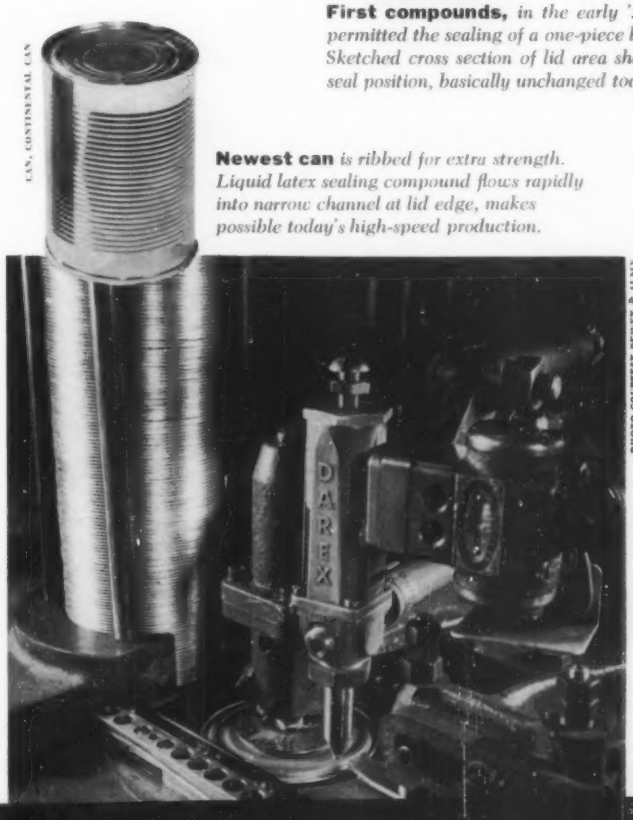
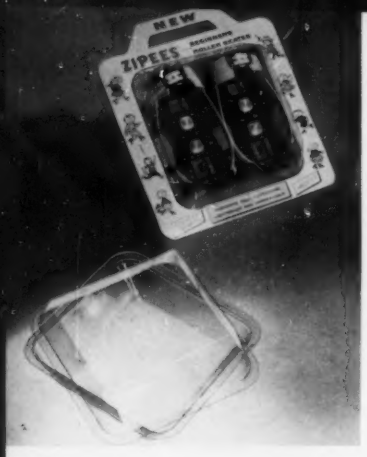


PHOTO COURTESY DEWEY & ALMY

PACKAGING PAGEANT



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1 Now it's roller skates packaged for self-selection appeal in a see-through blister pack with carry handle. Manning Mfg. Corp. reports new sales for Zipees skates since switching from conventional folding carton to this new rack package, which consists of two 0.020-gauge oriented polystyrene blisters and printed fold-over card. Blisters, Plastofilm, Inc., Wheaton, Ill., using Plax polystyrene. Die-cut card, Field Paper Box, Chicago.

2 Taste-tempting vignettes that occupy nearly half the facing panel give new appeal to the redesigned 1-lb. carton for Trunz's Farmer Boy lard shortening. On three panels, different natural-color photographic reproductions of food items suggest the product's varied uses. The fourth panel contains recipe copy. Carton, Milprint, Milwaukee.

3 An effective way to move a product off the retail shelf and onto the counter is suggested by the new gravity-feed dispenser for Sea Breeze Laboratories' Sea Breeze antiseptic. Designed to save space, the tall, narrow carton holds 12 packages. Two carton designs, depicting winter and summer scenes, promote year-round use of the antiseptic. Design, Robert Zeidman Associates, New York. Shipper-dispenser, Carton Services, Inc. Shelby, O. Printing, Liberty Printing & Lithograph Co., Pittsburgh.

4 Morgan-Jones adds new gift appeal to gift-item bedspreads by packaging them in a decorative vinyl re-use storage case. The frameless case has a zipper and carry handle. No copy appears on the package, which is printed in a floral pattern on white. A large unprinted area permits product visibility through the vinyl. Case, Elrene Mfg. Co., New York.

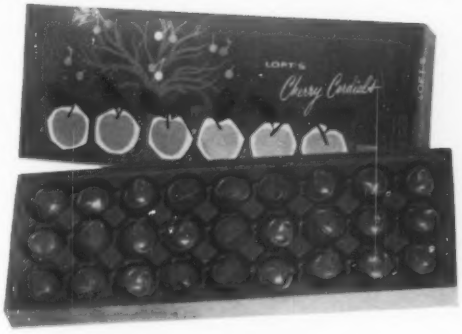
5 Upgraded user convenience and brand identity are incorporated in the new glass bottle for Henri's Food Products' Tas-Tee salad dressing. Taller than the former bottle, the container has a recessed waist, for easier gripping. The metal screw cap also has been enlarged, as has a redesigned foil label which gives new prominence to the brand name. Bottle, Foster-Forbes Glass, Marion, Ind. Label, Norway Gravure Co., Norway, Mich. Metal screw cap, Owens-Illinois, Toledo 1.

6 The Stephan Co. introduces a new line of glass-packaged men's toiletries. True to company tradition, the items will be sold only by barber shops. The square-shaped, slightly tapering bottles offer

easy hand hold. Design on cartons and bottle labels is calculated to achieve legibility and masculine appeal. Design, Jim Nash Associates, New York. Bottles, Pierce Glass, Port Allegany, Pa. Caps, American Can, New York. Labels, Schmidt Lithograph, San Francisco. Cartons, International Folding Paper Box, North Bergen, N.J., and United Board & Carton, New York.

6

7 Reduced production cost via increased packaging speed is reported by Loft Candy Corp. since adopting a molded polyvinyl-chloride tray insert for boxed Cherry Cordials. The plastic tray, with 27 pockets, enables workers to use both hands in loading candies. Individual paper cups formerly used required one-at-a-time loading, says Loft. PVC tray, Pantasote Co.'s Panta-Pak Div., New York.



7

8 Half-gallon, non-returnable glass bottles are being used by Golden Age Beverage Co. in a bid for a bigger share of the "family-size" soft-drinks market. The no-deposit feature is expected to stimulate sales. A gaily printed shipping carton contains one bottle each of the six flavors offered by Golden Age. Bottle, Brockway Glass, Brockway, Pa. Foil label, Spielman Co., Philadelphia.

8

9 A counter merchandiser that holds the package upright to invite pick-up by shoppers introduces Rexall's polyethylene-tubed Suntan Lotion With Insect Repellent. The new self-selection unit has a corrugated platform-style base with die-cut oval openings for stand-up display of 12 tubes. Tube, American Can's Bradley-Sun Div., Hillside, N. J. Display, Menasha Container of Calif., Anaheim.

9

10 More convenient for retailer and user is the new squat glass jar for Union Starch & Refining's Pennant Marshmal-O dessert topping. New 10- and 5-oz. containers, which replace taller ones of the same capacities, provide easier access to the last of the contents, says the packager. The jar's broad base and new stacking feature also ease retailers' shelf-stocking and storage problems. A new label design using pastel colors is aimed at enhancing the product's appeal. Jars, Armstrong Cork, Lancaster, Pa., and Anchor Hocking, Lancaster, O. Label design, DeForest Sackett & Associates, Chicago. Labels, U.S. Printing & Lithograph, Cincinnati.

10

COLOR PLATES COURTESY ROBERT G. NEUBAUER, INC.

Strong family identity *is a key element in new self-selection package design for Richardson & Robbins' products. Simple, legible copy and contrasting label colors aim at maximum shelf impact. Label's unusual background pattern strengthens family look by symbolizing the "and" sign in R&R logo.*

After 105 years,

Poised for a leap into broader markets than it has ever known before, still another of the "grand old names" in food packaging has been given a sprightly new dress carefully tailored to the demands of modern self-selection merchandising.

The packager is Richardson & Robbins Co., Dover, Del. (100 employees).

Founded in 1855, this famous canner of specialty foods was acquired last October by Wm. Underwood Co., Watertown, Mass., a venerable food packager in its own right. Underwood immediately decided to broaden the distribution of the Richardson & Robbins product line from regional to national markets. The starting point: sweeping revaluation and revision of surface design. Underwood's awareness of the need for package updating is reflected in the recent major revision of its own 90-year-old Red Devil food trademark.*

The story behind the redesign program adopted for Richardson & Robbins carries a simple but important message for packagers in every product field who may be thinking of widening their marketing horizons: Yesterday's achievements are no guarantee of success in an expanded distribution pattern. Even the best-established of product lines, moving into new areas, can benefit from updated package design that gets its message across in split seconds while implanting a memorable family image in the minds of bustling supermarket shoppers in their trips through the store.

In developing a completely new graphic design for Richardson & Robbins, the package designer first took a look into the history of the company, which predates the Civil War by six years. The picture was that of a packager which had carved out a comfortable but restricted niche for itself as a canner of a limited line of quality food products.

Richardson & Robbins reportedly was the first packager in the U. S. to devise (in the 1860s) a successful technique for canning boned chicken and plum pudding—items which have been its sales leaders for nearly a century. Other canned R&R products include fig pudding, chicken a la king, chicken fricassee and chicken broth. R&R also is credited with developing the squat, tapering, key-opening metal can, which eventually won the enviable accolade of imitation by a good many other food packagers.

However, the company's marketing area before its acquisition by Underwood was confined largely to the Atlantic Seaboard. The result: a steady but unspectacular record of sales success.

Market research also indicated to the designer that while there was a great deal of brand loyalty

* See "A Famous Trademark Gets a Happy New Look," MODERN PACKAGING, Jan., 1960, p. 89.

among users of Richardson & Robbins products, family identity was almost nonexistent. Some container labels featured the Richardson & Robbins brand name; some carried the packager's "R&R" logo (in various designs); others included a combination of brand name and logo. All were cluttered with copy, with conflicting type styles and with antique decorative elements.

Armed with these facts and keeping in mind the marketing aims involved, Underwood and its designer were ready to begin the job of developing a new label. A basic decision was that it must combine simplicity, strong family identity among products and an impression of high quality.

Another important consideration was that the label should suggest newness while retaining a distinct visual association with former package design, so familiar to generations of consumers. The need for suggesting newness, says Underwood, was twofold. First, it would indicate to old retailer-customers renewed vigor in the Richardson & Robbins sales effort. Second, the R&R line would, in effect, be a new brand to vast numbers of shoppers west of the Alleghenies. Thus the product line would have to rely largely on the self-selection values of package design—rather than on an established reputation of quality—to build up sales impetus at the point of purchase.

The new label design which has been evolved for Richardson & Robbins represents an effective bridging of the gulf between the former old-fashioned embellishment and modern, self-selection-oriented simplicity. An updated version of the R&R oval logo now appears as the dominant label-design element for every product in the company's line. This logo is flanked by the Richardson & Robbins brand name in subdued block lettering.

Carry-over identification from former packaging

a new life

Richardson & Robbins' famed food label fades into memory as it is replaced by a vigorous new surface design on all containers which arms the product line for expansion into nationwide self-selection outlets

Association with the past *is illustrated in comparison of old (left) and new tapered cans for boned chicken, printed by direct lithography. Oval R&R logo has been simplified and modernized, brand name has been retained but subdued, frills have been abandoned and mandatory data shifted to label's rear panel.*

Variation *from R&R's basic redesign is represented by direct-lithographed metal cans for chicken broth. To help shoppers identify between them, broth-with-rice can has green and white background; can for clear broth has a white background. Colors on product-data panel are reversed on each can.*

also is achieved by using, wherever possible, the same label-color combinations in the new designs as in the old. Thus, logo colors on all packages are white lettering on a gold-trimmed black oval. Label background color (red for most chicken products, white for clear chicken broth, white and green for chicken broth with rice, blue for plum pudding and red for fig pudding) also carries with it a subtle association with the past.

For distinctive family identification, label backgrounds throughout the line are studded with a gold- or silver-colored pattern of four-pointed stars. Label backgrounds on all R&R product containers formerly were solid color.

Facing-label copy has been reduced sharply in the redesign, in the interest of legibility and simplicity. Product data and other mandatory copy have been shifted to the rear panel, which also contains recipes and other informational or promotional elements which generally were lacking in the former package design.

Richardson & Robbins' traditional tapered can has been retained for the 6-oz. size of boned chicken (the company's sales leader) and for plum and fig puddings. On these cans, and on the cylindrical 12-oz. metal cans for chicken broth, labeling is direct lithography to the metal, using transparent inks. This technique achieves a glittering, foil-like effect in which the metal-container's inherent sheen becomes an intrinsic part of the design.

Paper labels for all other chicken products, including the 3½-oz. jar for boned chicken, are letterpress printed. On these labels, with the exception of that for canned chicken broth, the product name is printed in black type against a slightly tilted rectangular panel of brilliant yellow. (Broth labels are white, red, green and gold.) This color combination offers maximum legibility and stand-out appeal on crowded store shelves, says the packager.

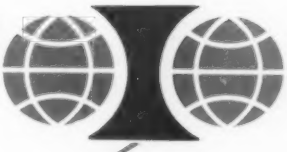
Although cost was not a major consideration in planning the Richardson & Robbins redesign, economies have been achieved through label standardization and through the use of same-color labeling within product lines. These factors permit gang printing of labels and hold the line on costs. The result, says the packager, is that the new R&R labels cost no more than the old.

Shoppers in the Middle Atlantic states will be first to see the new label dress for Richardson & Robbins products. Distribution in that area begins this month. Underwood expects that nationwide marketing will be in full swing early in 1961.

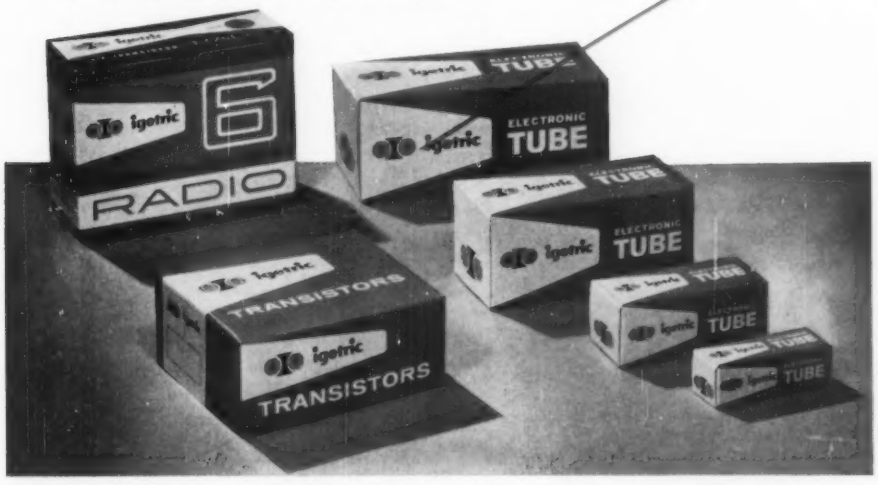
SUPPLIES AND SERVICES: Redesign program by Robert G. Neubauer, Inc., Fairfield, Conn.

Nostalgic line-up *of Richardson & Robbins labels indicates the former lack of a central trademark or a unifying brand image. Note the variation in brand-name lettering and in logo design among containers.*

Representing world hemispheres, *two stylized drawings are linked with letter "I" to form trademark. "Igetric" is for "International General Electric."*



Prominent position *of mark on all packages gives instant recognition. Simple design assures effective reproduction in all sizes, on all surfaces.*



INTERNATIONAL SYMBOL

GE's solution to a problem that will face many U.S. packagers: identify, yet distinguish, the foreign-made product

The General Electric Co. has a policy that its famous GE-in-a-circle trademark be used only on products made in its wholly owned and operated plants. Significant, therefore, is a new and completely different symbol adopted to identify packaging and products made today by other manufacturers for the International General Electric Co. Div. of General Electric Co., U.S.A.

The new trademark, created by an American package-design firm, now appears on the packaging for a line of transistor radios and electronic components manufactured for IGE by Tokyo Shibaura Electric Co., Ltd., in Japan for marketing through distributors solely outside the United States.

The symbol incorporates a coined word, Igetric, for "International General Electric," combined with a distinctive letter "I" linking two stylized line drawings representing the two world hemispheres.

The objective, of course, is an immediately recognizable mark to express the international character of the company, effective for reproduction in two colors in any size and on any type of packaging material. The problem is one which will face many American packagers in today's expanding and changing world markets.

On all the packages and on all instruction booklets, promotional material and advertising, the lettering of the mark appears in black with the hemisphere drawings in red. On all side faces of the cartons it is placed in a trapezoidal-shaped white panel surrounded by a red background where product name is either in reverse white or overprinted in black. Cartons for radios are given added quality appearance by the use of a third color, gold.

The aim, according to *IGE News*, is to provide a mark that distinguishes products augmenting GE's current production lines and giving a broader coverage for markets outside the U.S. and Canada.

SUPPLIES AND SERVICES: Trademark design by Stuart & Gunn. 370 Lexington Ave., New York 17.

A PATH TO F&DA

Here are step-by-step details on how
Hercules' pioneering 'clearance by specification'
for food-grade polypropylene
was hammered out in 31 months
by devising unique radiological techniques
to shorten animal and chemical testing

Key men *in Hercules' F&DA victory were toxicologist Dr. John P. Frawley (left), who devised unique animal-feeding tests using radioactive polypropylene, and Dr. Verne R. Grassi, development specialist in the company's Cellulose Products Department, who coordinated the entire 31-month testing and petition program which was conducted by Hercules.*

Packaging history was made on April 16, 1960, when a routine item in the *Federal Register* gave notice that polypropylene resin, as submitted by the Hercules Powder Co., had won full, formal approval of the Food & Drug Administration as a new packaging material for food products.

This was no "prior sanction," no "generally recognized as safe," no "extension for further testing." This was the very first unqualified clearance of a *new* material, not in general use prior to Jan. 1, 1958, under the exacting procedure required by the Food Additives Amendment of 1958 to the Federal Food, Drug & Cosmetics Act.[1]

Regardless of the future of polypropylene—which looks promising, indeed[2]—this case is of the utmost significance, because the Hercules petition appears to have cut a trail-blazing path through an unknown legal and technical forest which countless new food-packaging materials in the future can follow.

The procedure is worth studying, step by step.

The unique basis of this petition—clearance by specification—is expected to have far-reaching affects on other packaging materials, both old and new, by pointing the way for packagers and suppliers to specify both the safety and composition of their materials and the tests necessary to determine these constituents and perhaps bypass the almost impossible task of devising chemical tests sensitive enough to trace migratory compounds into the foods contained in the final package.

This latter requirement, written into the law to facilitate enforcement, has been recognized by chemical experts in both industry and the F&DA as a major stumbling block to compliance with the law

[1]See "Crisis: The New Food Law," MODERN PACKAGING, May, 1959, p. 75; June, 1959, p. 106, and July, 1959, p. 92.
[2]See "Polypropylene Film," MODERN PACKAGING, Jan., 1959, p. 113, and "The First Polypropylene Container," Aug., 1959, p. 88.

APPROVAL

—an obstacle that was first overcome by the practical solution devised by Hercules.

Of particular importance is the fact that while legal counsel was essential in developing the philosophy behind this petition and in persuading Federal officials that this approach was within the framework of both the Food Additives Amendment and F&DA's administrative discretion, the petition is primarily a technical document.

And the level of technical ingenuity needed to prove the safety of complex polymer compounds is underscored by special radiological techniques for both chemical and toxicological studies devised for this project. These techniques, which considerably shortened the test procedures, should be of great value to other suppliers and to packagers, who are, in the end, responsible for compliance.

Packagers should take note of the time needed to obtain this clearance. While the unique character of the Hercules petition and the unknown toxicology of polypropylene undoubtedly impelled F&DA officials to be extra cautious, many of the test phases would be no shorter for any other material. In fact, use of the more conventional type of animal-feeding tests would have lengthened the procedure.

Procedure

A total of 31 months elapsed from start to finish.

Complete extraction studies, including basic analysis of the polymer, alone took 15 months.

The toxicological studies, shortened by the application of astute scientific reasoning and radioactive tracers, still took four months.

Development of special test methods to meet the requirements that were set up by F&DA covered another three and a half months.

Even after the petition was filed, the need for additional test data and the time required for evaluating the petition accounted for nearly 10 months before final action was forthcoming.

Hercules officials emphasize that there was no unreasonable delay by F&DA in its deliberations.

The lengthy procedure was caused primarily by the tremendous mass of information that had to be assembled for the petition—a body of data that required the interlocking research efforts and approval of more than a score of toxicologists, chemists, lawyers and top-management executives before the final 287-page confidential document was submitted to the Food & Drug Administration.

Radioactive-tracer technique
involved the use of special liquid-scintillation spectrometer. Extracted components of radioactive polypropylene are measured by an electronic counter (at right).

Here is a chronological account of the procedures used to accomplish this formidable task.

In late 1957 it was obvious to Hercules officials, who had taken part in Congressional hearings on the then proposed Food Additives Law, that such legislation was only a matter of time. Hence, work was started in September of that year on a chemical analysis of polypropylene to disclose the chemical and physical structure of this polyolefin and to obtain limited data on what chemicals were extractable by various standard solvents.

This material was forwarded to F&DA in May, 1958, for an informal opinion as to what further work must be done. Such informal approaches and clearances were fairly common procedure prior to the enactment of the new law and are the basis for the "prior sanction" and "generally recognized as

safe" (GRAS) status of most packaging chemicals.

In this case, however, F&DA countered with a request for additional extraction data to trace the migration of various short-chain or low-molecular-weight polymers from food packages.

Then, in September, 1958, the new Food Law was signed. Because there was no established history of use for polypropylene in this country prior to enactment of the Food Law, application for GRAS status was impossible and clearance had to be obtained via a formal "new-material" petition.

Such a petition requires three broad areas of investigation, involving:

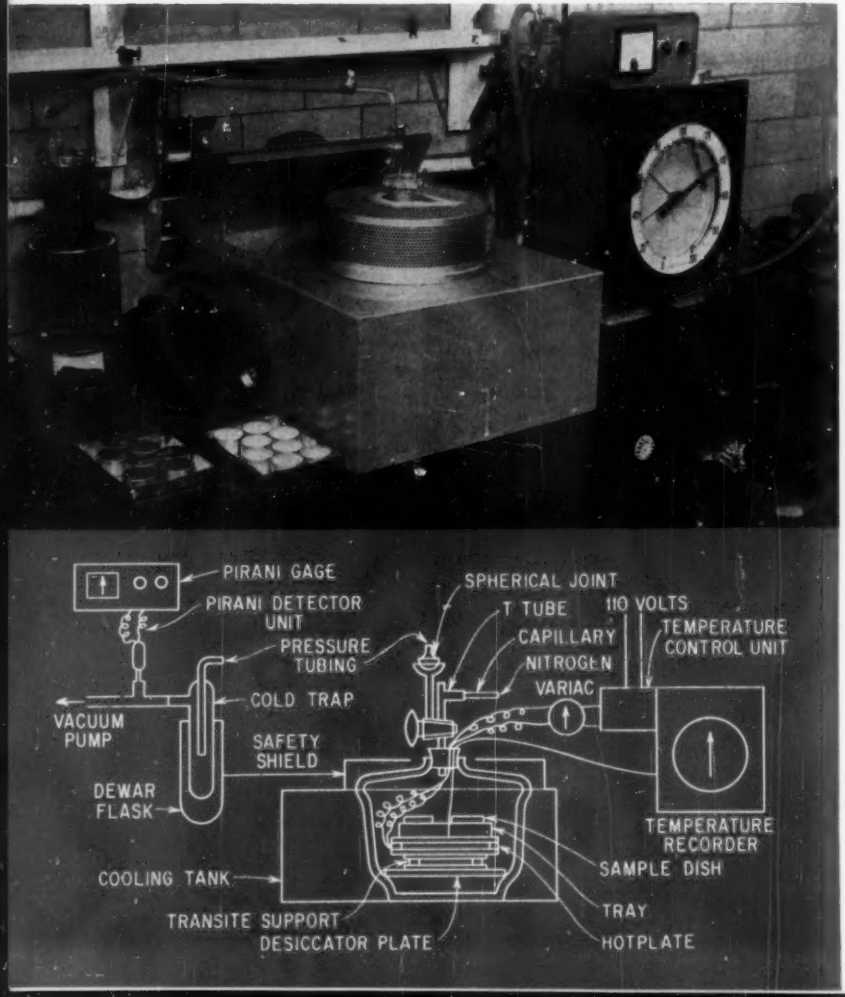
1. Chemical composition of the material and complete information on what chemicals migrate to the food and in what quantities.
2. Toxicological data on safety of all migrants.
3. Test methods that could be used by F&DA to check packaged food products on the market for adherence to tolerances.

Until this time, the latter point had been interpreted by F&DA as necessitating chemical tests capable of spotting the most minute amounts of migrants in any food that might be packaged in the material under question. And this evidence was to be followed by strict tolerances on the amount of migratory chemicals permitted in the food.

Hercules recognized the impossibility of developing tests either broad enough in scope to identify specific chemical migrants in the multitudes of foods that might be packaged in polypropylene or numerous enough to accommodate all of the specific types of foods. Instead, the company set out to prove that, even at levels far above what could possibly migrate to food, all migratory constituents in polypropylene were completely safe—thereby eliminating any need for establishing tolerances.

Shortcut by tracers

Thus, with migration and chemical-composition studies already well under way, company researchers started toxicological tests to get the needed proof of safety in October, 1958, less than 30 days after the new Food Additives Law was signed.



Package test apparatus *was devised by Hercules for use by F&DA in checking polypropylene film containers in interstate commerce. It consists of a high-vacuum dessicator heated by a hotplate (middle) for determining the solids removed from polypropylene by a series of special solvents. Details of wiring and piping are shown graphically in the schematic diagram (below).*

Seeking a rapid answer to the question of toxicity, the company drew on its previously acquired chemical knowledge of the resin and devised a dramatic shortcut to the conventional type of long-term animal-feeding experiments.

This was the first of two unique achievements by Hercules of significant interest to packagers and suppliers of packaging materials.

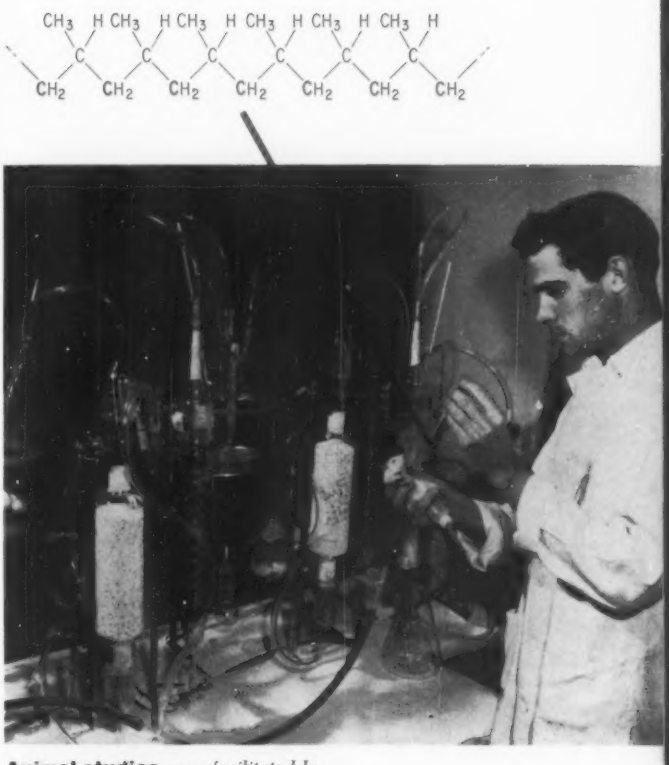
Gambling that the molecular weights of the polypropylene migrants were high enough to prevent the migrants from being absorbed by an animal system, the technologists decided to feed rats polypropylene extractables tagged with a radioactive carbon atom. If these tagged compounds were excreted in the feces in the same amount as the intake, it would be proved that migratory elements from polypropylene are not absorbed in the body.

While such a procedure is fast and the results are easy to measure accurately, it is not simple to apply. The radioactive polypropylene had to be manufactured in the laboratory in exactly the same manner and composition as in giant commercial installations, and both animal wastes and organs had to be carefully collected and analyzed with a sensitive and expensive liquid scintillation counter, which Hercules installed for the purpose.

After some experimentation, a way was found to incorporate carbon 14 atoms into the polymer molecules. The resultant polypropylene resin was used in the animal-feeding tests for detailed studies of the basic resin structure and in the final extraction studies. For feeding tests, the polypropylene resin was extruded into film under standard commercial conditions and extracted migrants were fed to the test rats in an edible-oil solution.

An independent biological research organization (Hazleton Laboratories, Inc., Falls Church, Va.) was selected to run the highly specialized feeding-and-collecting experiments. Final samples of rat wastes, including respired gases, and the vital organs of the deceased rodents were returned to Hercules in January, 1959. By February it was known that the decision had paid off. No extractables from polypropylene were absorbed by the rats even when fed in amounts exceeding 100 times the total quantity of the compounds which could migrate from the normal polypropylene resin.

Meanwhile, important decisions were being made by company legal and technical experts on the test methods required by F&DA. With chemical tests-in-food now rated as impractical, another way had to be found to assure compliance with this rather ambiguous section of the Food Law. Adding to the difficulty was the important fact that only the migrants of polypropylene are subject to the law—not the basic resin itself. Hence, any procedure that depends on testing the material independently of the food must still be applied in terms of the migrants, not in terms of the basic resin.



Animal studies *were facilitated by glass metabolism "cages" where rats, fed with radioactive fractions of polypropylene (as in molecular diagram above), were closely confined to permit collection of all waste products, including air. Analysis then disclosed the metabolic fate of migratory chemicals. (In diagram, blue C designates carbon 14 tracer.)*

Shortcut to clearance

Working on this thesis, the technical experts devised an ingenious concept of clearance by specification that not only met legal requirements, but hurdled the test-in-food stumbling block that had baffled many industry and F&DA technical people from the time of the passage of the law.

This is the second point of great significance to all packagers and packaging suppliers, perhaps of even broader practical value than the tagging of extractable migrants described above.

Though still convinced of the complete safety of migrants and the needlessness of tolerances at this point, the Hercules theory ran as follows.

If all migrants from polypropylene are harmless, (even if 100% of the chemicals in the resin should

migrate) and if these migrants derive from a resin that is held to carefully controlled specifications, then F&DA can check on the migratory elements by testing the plastic package itself—a relatively simple procedure. It is this technical-legal philosophy—which was accepted by F&DA—that really sets this petition apart as an important pioneering achievement in compliance with the Food Law.

Work on a quick and sure method for testing polypropylene containers was started in December, 1958, and was completed the following April.

Initially, the technique involved specification of the polypropylene resin by its solubility in decahydronaphthalene and its reduced specific viscosity (RSV). Hercules felt that the solubility test would define the amount of atactic polypropylene (random-chain polymers constituting about 5% of the resin) which would migrate and that the RSV test would pinpoint migratory isotactic polymers. Infrared spectrum analysis, melting point and resin density were also included as qualitative data.

The quantitative decahydronaphthalene solubility test required the development of special laboratory apparatus by Hercules and special chemical techniques, which were detailed in the final order that was printed in the *Federal Register* April 16.

Meanwhile, complete migration studies were carried on by the Hercules research department. Samples of radioactive resin were extruded into film and treated at 135 deg. F. with the eight standard solvents recommended by F&DA: distilled water, 10 and 50% solutions of ethyl alcohol, corn oil, 3% sodium chloride, 3% sodium bicarbonate, 3% acetic acid and 20% sucrose. Additional tests with these solvents were performed at 212 deg. F. to anticipate applications of polypropylene in boilable containers.

Readings were taken at weekly intervals until maximum migrations were determined and time curves were drawn on all migrants to show the length of time and extent of maximum migration. These tests were concluded in February, 1959.

Writing the petition

An enormous amount of labor, supervised by the Development Division of Hercules' Cellulose Products Department, was required to assemble all of the diverse technical information and compose the final petition document. The task, involving several workers, took more than a month and was completed May 15, 1959. Toward the end, cross-checking of technical data and evaluation of the petition from the standpoint of company policy involved many more personnel, including top management.

F&DA acknowledged receipt of the petition in early June and, after studying the document to assure its completeness, formally "filed" (accepted) the petition June 24. Notice of filing of the Hercules petition subsequently appeared in the *Federal Register* on July 24, 1959.

Under the law, F&DA had 90 days in which to act on the petition and, if needed, grant an additional 90 days. But it was to take almost 10 months before this petition was formally approved. Though F&DA informally accepted the toxicological data almost immediately, administration officials subsequently asked for much extra information on trace chemicals in the polymer and requested that major changes be made in the method of specification.

The first of F&DA's requests came in early June, 1959—for more extraction data on trace-processing chemicals and catalysts and on stabilizers. These data were supplied in early August. In September, F&DA announced that it needed the second 90 days for further evaluation and the next month requested polypropylene samples for testing. Resin in powder, flake, film and molded forms was supplied by Hercules in November, which caused all future dates to be pushed ahead, since F&DA suspended the "countdown" until it had received the samples.

A further hitch arose in October, when F&DA expressed dissatisfaction [*Continued on page 178*]

Lawyer *John Kuniholm formulated Hercules' basic legal approach, then became a virtual commuter to Washington in the company's successful two-and-a-half-year effort to convince F&DA officials that "clearance by specification" was a practical solution to the approval problem. It required 25 contacts with Washington.*

"Consistent uniformity is one reason we use Knox," says leading household products manufacturer

"Uniformity of size, along with strength and quality, make up the three essential elements we demand in our glass bottles," says the Supervisor of Bottling of one of the nation's foremost manufacturers of liquid household cleaners and other consumer products.*

"Knox Glass, Inc., has been furnishing us this high caliber glass for a period of twelve years now, and its breakage rate, as it goes through the various steps of unloading, conveyor transportation, filling, capping, labeling, case packing, and shipping is so low as to be negligible, actually amounting to less than 1%.

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Find out how the new/Knox Glass can serve you — consistently. Contact Knox Glass, Inc., Knox, Pa., or any one of 37 sales offices.

*Name available on request.

the new/ **KNOX GLASS**

WHEN OLD IS NEW

Capitalizing on the success of its Early American and Old Spice themes, Shulton draws on history again for its York Town toiletries and packages them luxuriously in both oldest and newest materials

Knowing when it has a good thing—and how to make it even better—Shulton, Inc. will introduce in October a new, high-priced line of grooming aids for men that will be as thoroughly wrapped up in a colonial design theme as are its popular predecessors, Early American and Old Spice.*

But this time, instead of serving to launch the company itself, as did those historically steeped packages back in 1937-38, this new premium line—"York Town 1781"—is intended to move Shulton (1,700 employees, $44,000,000 gross) far ahead of the competition in price, prestige and luxurious packaging. It is a natural for both the carriage trade and the gift market.

Basic items in the Old Spice line still sell for what was then (1938) a premium price of $1. But, while Shulton held the price line, it found its premium classification destroyed by competitors who did not hesitate to raise prices. York Town 1781 gives Shulton a prestige position once again. The brand was created, says vice president Frank N. Carpenter, in charge of Shulton marketing strategy, to meet a growing demand from top department-store buyers for a prestige line at a price level that would add high-ticket volume sales to the standard day-in, day-out sales producers they offer.

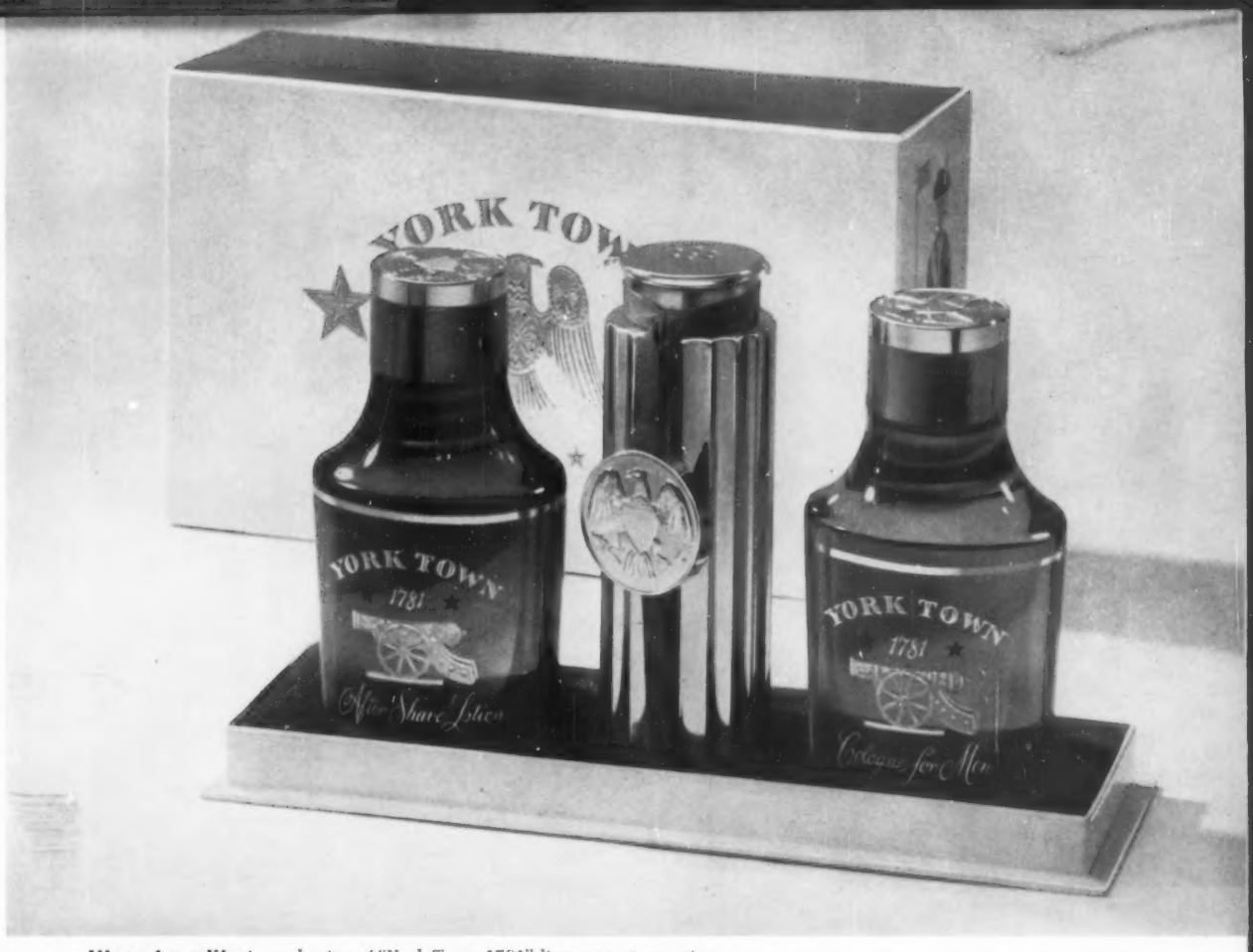
York Town cologne will sell for $4.50, after-shave lotion for $3.50 and a gift set including shaving talc at $10. Naturally, toiletries to sell at these prices must suggest top quality in their packaging.

Of particular interest to packagers is a combination of the old and new in Shulton's York Town packaging, for the containers combine two of the oldest packaging materials—glass and paperboard—with three of the newest—aluminum, polystyrene and polypropylene. And while the containers

*See "Packaging's Hall of Fame: Shulton's Old Spice for Men," MODERN PACKAGING, Sept., 1953, p. 102.

Representative Types of
Original Washington Inaugural Buttons
sketched from the showcase in the
Valley Forge Museum

Intensive research *into colonial history resulted in adaptation of Paul Revere tea caddie for fluted aluminum talc shaker and polished brass reproduction of Washington inaugural button, both uncovered during Shulton's two-year search of museums and other historical resources.*



Utmost quality *in packaging of "York Town 1781" line suggests prestige appeal of this new Shulton brand of men's toiletries to be introduced in October. Colored glass bottles are topped by polypropylene screw caps with inset polished-brass reproductions of Washington inaugural button. Aluminum canister for talc is dressed in red ribbon bearing inaugural button and is topped with polished-brass shaker cap with slide-open device.*

are adaptations of early apothecary jars and Paul Revere tea caddies, the custom glass coloring (blue and green) and fired-on bottle decorations are as new in technique as the decorations themselves are old in authenticity. Details on the glass-coloring method are not yet available.

The cologne and lotion are in gold-decorated apothecary-type bottles with red polypropylene screw caps topped with a polished brass reproduction of a Washington inaugural button. The talc is in a fluted aluminum canister adapted from a Paul Revere design, decorated with a red ribbon to impart a military touch and topped with a polished brass shaker cap fitted with a slide-opening device.

All containers rest in red-flocked, thermoformed high-impact polystyrene platforms in the bases of paperboard set-up boxes. The boxes are tight-wrapped in cast-coated paper lithographed and embossed with appropriate reproductions of colorfully uniformed Revolutionary Army officers and gold stamped with stars and American eagles. This theme is pursued throughout with gold reproductions of ancient gun carriages on the bottles, an inaugural button affixed to the ribbon on the talc canister and Revolutionary War motifs for counter displays, sales literature and advertising. Even full-color three-dimensional 8-in. wood figures of the officers are provided for point-of-sale promotion.

This newest entry in the highly competitive toiletries field was sparked by the inherited interest in American history of Shulton's president, George Lightfoot Schultz, whose father, William Lightfoot Schultz, founded the company and developed the original sailing ship and colonial themes in 1937. Direct descendant of Francis Lightfoot, a signer of the Declaration of Independence, the son toured Yorktown, Va., two years ago and conceived the theme before he created the line.

Thereafter, A. J. Grodin, Shulton's executive art director, repeatedly visited the Yorktown-Williams-

Bottle development *in Shulton's own plastics-molding facilities ranged from sketches through trial shapes and sizes (background) to split mold (left) for final bottle shape (middle) of apothecary-style colored bottle.*

burg area and put together a miniature museum of useful reproductions—historical maps, battle plans, period costume sketches and historical literature, plus examples of Washington inaugural buttons from the Valley Forge Museum. From early American hand-lettered and printed material he adapted lettering for the packaging that simulates 18th-Century calligraphy. On the back of each carton and on counter display cards is a printed legend in this style telling the derivation of the line.

It waxes both historical and poetic: "Our love of luxury is just as much a part of our heritage as our love of liberty. The influence of French and British elegance rose to fresh importance in art, architecture, even in utilitarian objects. As a result, the art forms which developed in the Post Revolutionary period are rare blends of American functionalism and classical European beauty. From this combination of new world freshness and old world elegance came the inspiration for York Town 1781 toiletries for men."

Traditionally, Shulton makes many of the materials going into its packaging. First, the company's own development laboratories created mock-ups for all York Town packages. In production, Shulton, which has its own box-making and plastics-molding facilities, fabricates all the cartons and molds the polypropylene bottle caps, snapping an "inaugural button" into the recessed top of each cap.

SUPPLIES AND SERVICES: Bottles by Wheaton Glass Co., Millville, N. J., decorated by Ceragraphic, Inc., 171 Newman St., Hackensack, N. J. Polypropylene caps molded by Shulton from Hercules resin. Polished brass "inaugural buttons" by Risdon Mfg. Co., Naugatuck, Conn. Aluminum canisters by Scovill Mfg. Co.'s Cosmetic Container Div., 99 Mill St., Waterbury 20, Conn., with polished brass cap also by Scovill. Ribbon by Rainbow Ribbons, Inc., 404 E. 108 St., New York. Flocked platforms vacuum formed by Colophan Plastics, Inc., Montville, N. J. from Dow's high-impact polystyrene. Wrappers by Ar-Kay Printing, 200 Hudson St., New York, using Champion Paper's "Kromekote."

Custom-made individual ladies' shaver display Set-Up Boxes
for *Schick* Incorporated

1st AWARD WINNER

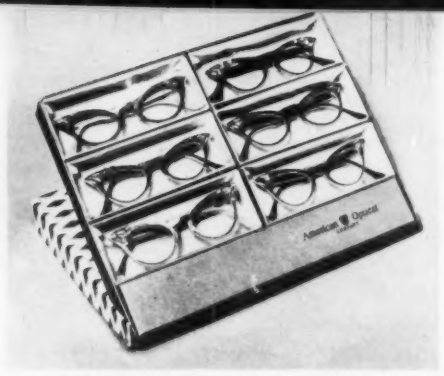
under Personal Accessories,
for appeal and functional design,
in the competition of the
National Paper Box Assn.,
New Orleans, April 28, 1960.

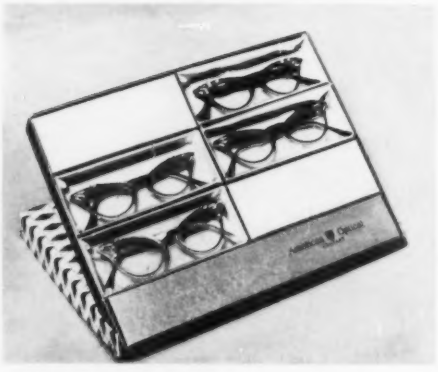
another prestige product packaged by BURT

Oval Shape, combined with use of attractive blue and gold coverings accents elegance, achieves feminine appeal.

Nest-Shaped vacuum-formed tray snaps into base, holds shaver erect for display, provides quick and easy loading.

F. N. Burt Company, Manufacturers of Small Set-up Boxes, Folding Cartons, Transparent Containers. 2345 Walden Ave., Buffalo 5, N. Y.
Offices in Principal Cities or Write Direct. Canadian Div., Dominion Paper Box Co., Ltd., 250 Islington Ave., S. Toronto 18, Ont., Canada





New sparkle for 67% less

In its second break with conventional packaging forms in as many years, American Optical Co. gives a new sales lift to eyeglass frames while cutting material costs by about 67%. Last year, this Southbridge, Mass., firm introduced a bright packaging look for a line of optical products. (See "Dynamic Design for Professional Line," MODERN PACKAGING, Jan., 1959, p. 102.) Now the company is doing a similar job on sample packages for dealer display of eyeglass frames.

Formerly, these products all were packaged in the traditional leather-covered, hinged steel box. This costly container, still used for more expensive items, has been discarded for frames in the $3-$5 price range in favor of gaily colored "consumer-style" display packaging. An example is the tray-type box for AO's Tip-Top line. Two of its six compartments have backings that blend with basic box decor. These compartments are reversible so that four to six frames can be shown, suggesting that the display was created for just that number. A panel below the compartments accepts pressure-sensitive labeling that can be changed so the same box can be used for various items and promotions. *Display packages by Homer-Alden Co., North Attleboro, Mass.*

COST

Easy-to-handle dispensing container cuts inventory

Reduction of package units, lower cost and greater user convenience are reported by Schwarz Laboratories, Mount Vernon, N. Y., since adopting a 5-gal. polyethylene-cube-in-carton dispensing container for liquid water corrective—a product used by brewers to control the alkalinity of brewing water. The product formerly was packaged in 1-gal. glass jugs. Larger quantities, says Schwarz, were not feasible because the glass containers were hard to handle. There also was constant danger of breakage. Going to the new polyethylene-and-corrugated package has enabled the company to quintuple the content of individual containers, at a reported saving of 66% in over-all packaging costs.

A polystyrene-tipped rubber hose permits the user to dispense the liquid without removing the new container from its storage shelf. The hose's probe tip is inserted through the walls of the carton and inner plastic liner. Polyethylene's "memory" characteristic prevents product leakage during dispensing and after the probe has been removed. *"Cubitainer" and dispenser by Hedwin Corp., 1600 Roland Heights Ave., Baltimore 11. Corrugated carton by Hinde & Dauch Div., West Virginia Pulp & Paper Co., Sandusky, O.*

Economy by the bag

Adoption of a moisture-protective paper-polyethylene-foil bag for packaging dried chopped onion is paying off in more ways than one for the Gentry Div. of Consolidated Foods Corp., Los Angeles. The company points out that the new heat-sealed package is lighter in weight than the metal can it replaces and that 1,000 empty bags can be stored in the same space formerly required for 15 No. 10 cans.

In addition to these significant weight and space savings, says Gentry, the automatic-style laminated bag has a number of advantages that make it attractive to consumers. It is easy to open for pour dispensing of the free-flowing chopped onion. It can be reclosed for protection of the unused portion by folding over and crimping the bag top. When closed in this manner, the bag supplier reports, the package will keep its dry contents fresh and moisture free for indefinite storage periods. The bag also is obviously easy to store on pantry shelves and it can be disposed of conveniently after use. Directions for reconstitution of the dried chopped onion are printed plainly on the front panel of the bag. *"Moistite" paper-polyethylene-foil bag by Crown Zellerbach's Western-Waxide Div., San Leandro, Calif.*

CUTTERS

Higher speed, lower cost

In the combination of tough, high-gloss cast polyethylene film and a battery of semi-automatic package-forming and sealing machines, Paper Art Co. reports that it has achieved new efficiencies and economies which are reflected in a 7% saving in the cost of packaging such paper products as cups, plates, napkins and tablecloths. These items formerly were packaged in cellophane and conventional polyethylene.

Cast polyethylene's excellent machinability is a major factor in cost reduction, says the Indianapolis firm. This characteristic has permitted Paper Art to replace 11 semi-automatic packaging machines with six higher-speed units. Each is serviced by one operator, whose job is to load the paper product into the open vertical seam of roll-fed film tubing. Heat sealing and package cut-off then are done automatically by the machine.

The strength of cast polyethylene also is expected to reduce merchandise returns caused by package breakage, says Paper Art. *Cast film by Ludlow Plastics, Needham Heights, Mass., using U. S. Industrial Chemicals' polyethylene. Forming and sealing machines by Mehl Mfg. Co., Div. Sydney-Thomas Corp., 2057 Reading Rd., Cincinnati 2.*

THE BEST SALESMAN FOR BREAD IS CELLOPHANE

Bread, potato chips, what-have-you—you'll find that cellophane will get a product from the store shelf into the shopping basket faster than any other packaging material. The reason? It's because only cellophane provides a sparkling transparency that shows your product to its best advantage.

Plain or printed, cellophane does the job. And cellophane's strength, freedom from static, and sealability speed all packaging operations.

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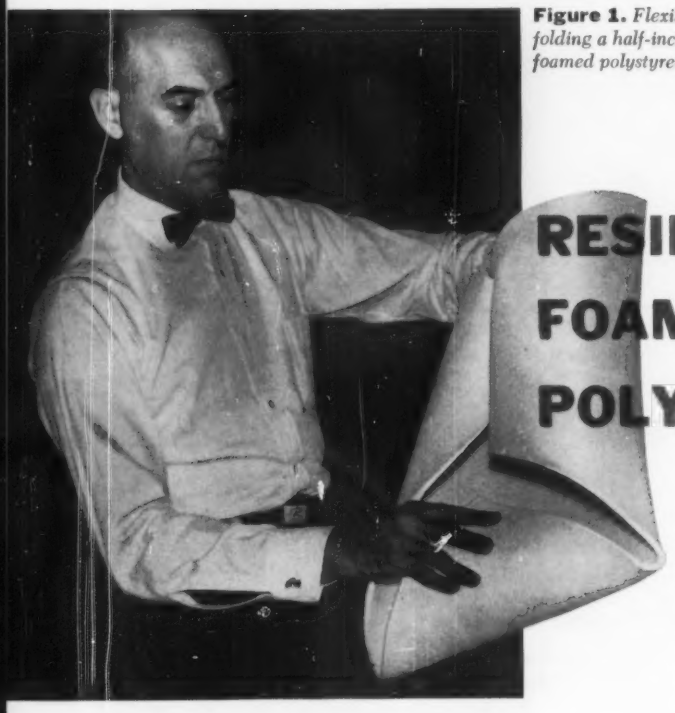


Figure 1. *Flexibility is illustrated by folding a half-inch sheet of new resilient foamed polystyrene back over itself.*

RESILIENT FOAMED POLYSTYRENE

A new plastic cushioning material adds resiliency and a degree of flexibility to the basic advantages of low-cost polystyrene, offering a new approach to protective packaging.

*By T. J. Grabowski**

The search for a relatively inexpensive, true cushioning material to protect fragile items easily damaged by light shocks has resulted in development of a highly promising, new resilient form of foamed polystyrene previously not available.

Foamed polystyrene plastic is as old as the U. S. commercially produced solid plastic (1)[1] dating back to the 1935 patent by Munters, et al (2) and was produced initially by an extrusion process. In recent years, the production of foamed polystyrene has been accomplished by utilizing expandable beads of the polymer following developments both in Germany (3) and in this country (4, 5). While the extruded foamed polystyrene has been used in certain packaging applications with shapes fabricated either by mechanical means or by hot melting, the bead form provided a new and wider field of packaging possibilities by its capability of being molded into complex shapes. In both instances, however, the foamed plastics produced were essentially rigid (the bead form has generally been acknowledged to be less brittle and friable) and consequently their use has been confined primarily to the packaging of items which could be considered fairly rugged or, by virtue of mold or shape conformance, permitted weight distribution over a relatively large surface area so that point impacts could not readily occur. Such use of these materials in packaging is generally referred to as positioning, blocking or bracing, not true cushioning.

Many items today are fragile in another sense. Instruments, gauges and other sensitive equipment

*Research & Development Center, Armstrong Cork Co., Lancaster, Pa.

[1]Numbers in parentheses identify References appended.

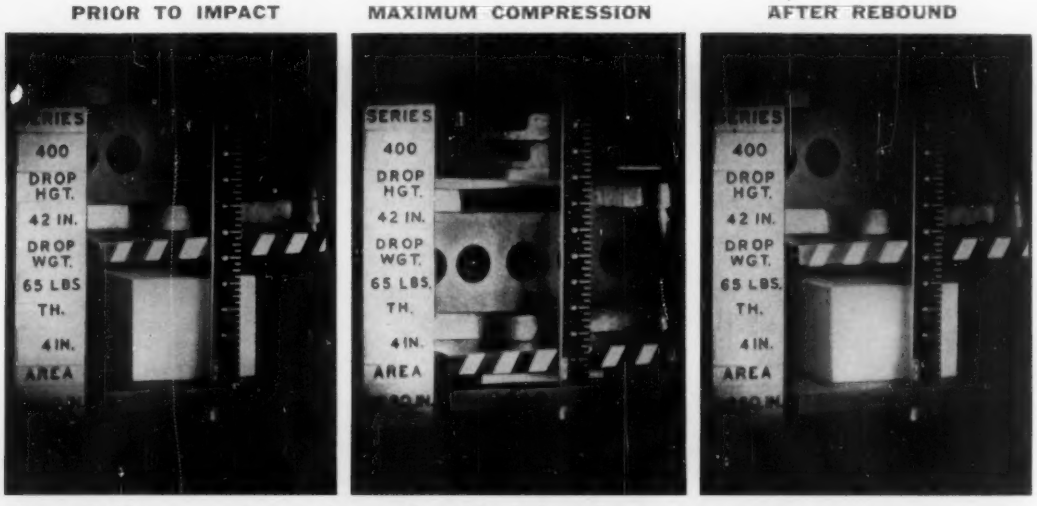


Figure 2. *This sequence, left to right, was taken with a high-speed motion-picture camera at 3,200 frames per second. The three photos cover a period of less than 0.1 second. Note that Resilo-Pak 400 material is compressed by the falling load (second frame) from 4¼ in. to less than ⅛ inch. As the load bounces back up (third frame), the material immediately recovers practically all of its original thickness. (An additional amount of thickness is recovered after 1 minute. Measurement of thickness taken 3 min. after a series of five drops for this particular test, each drop being 1 min. apart, showed recovery to 96.9% of original thickness, or a dynamic set of only 3.1%.)*

have components which are easily damaged by relatively light shocks. Damage may occur from such shock by exceeding the ultimate strength of the item, by breaking seals, by warping or separating interior filaments, and the like. In these cases, a true cushioning material must be utilized which will permit the item to be decelerated through a sufficient distance to prevent damage to the packaged product as it is dropped or shocked.

Armstrong's new resilient form of foamed polystyrene, called Resilo-Pak, is a true cushioning material, which means it has the ability to absorb crushing loads and yet be able to spring back essentially to its original thickness to absorb subsequent shock loads. In other words, the true cushioning material must possess both energy-absorption characteristics and resiliency. Resiliency previously had been unattainable in foamed polystyrene.

Three types have been developed, according to degree of stiffness. Resilo-Pak 200 is the soft type, Resilo-Pak 300 is the medium type and Resilo-Pak 400 is the firm type. Average densities are 0.5, 0.75 and 1.3 lbs./cu.ft. respectively.

This new form is moderately flexible, as well as highly resilient. Figure 1 shows a ½-in. sheet of medium material being folded back over itself. This is not to imply that the material can be flexed excessively or stretched like certain elastomeric foams; rather, there is a measure of flexibility in the material which permits it to be used around curved surfaces which are not too extreme.

As regards the resiliency of Resilo-Pak, Figure 2 illustrates graphically what happens when firm material is subjected to a severe dynamic loading.

Physical properties

Resilo-Pak is moderately flexible and highly resilient, as has just been described. While the cushioning or shock-absorbing characteristics are of greatest importance and will be examined later, what about its other physical properties? The new material possesses essentially all of the proven advantages of its rigid cousin, in addition to its own unique properties. These properties are listed in Table I (page 123) and are discussed as follows:

1. *Density.* Densities are all less than 2 lbs./cu.ft. This is important where weight represents a substantial portion of the shipping cost. However, density alone is not the necessary criterion for shock-absorption characteristics; stiffness or energy-absorption capacity of the foam is more important, as will be discussed later. Average densities possessing the best combination of properties range in steps from approximately 0.5 to 1.3 lbs./cu.ft. for the three different types. As is well known in the foamed-plastics field, some variation in density is to be expected, but variation is within reasonable limits and does not greatly affect the cushioning properties of the individual types.

2. *Chemical properties.* Solid polystyrene has been used for containers, toys, refrigerator panels and an endless variety of consumer and industrial

products for several decades without fear of contamination or toxicity. Foamed polystyrene shares the same degree of acceptance. It is non-corrosive, non-toxic, has no odor, no taste and is not affected by most chemicals. Certain solvents which dissolve polystyrene will even more readily dissolve the thin cell walls of foamed polystyrene. Such solvents include ketones, esters and aromatic hydrocarbons. Aliphatic hydrocarbons and alcohols generally have little effect on foamed polystyrene.

3. *Other general properties.* Polystyrene plastic is known to be non-hygroscopic. When subjected to a high-humidity environment, foamed polystyrene does not pick up water even after exposure for several years. When submerged in water, the foam picks up moderate amounts of water on a volume basis, this basis being chosen because pick-up by weight is misleading for such unusually low-density material. Even when exposed to high temperatures and humidities, and when submerged in liquid water for long periods of time, the material does not swell, shrink or disintegrate. Resilient foamed polystyrene possesses no capillarity or wick action (6). It is flammable, burning at a moderate rate.

This material is rated as non-dusting when tested in accordance with Federal Specification PPP-C-843 for this property. It is considered non-abrasive by a test procedure specified by the Freight Classification Committee. It does not support mold growth (7), nor is it a source of food for rodents, insects or other pests. Since its thermal conductivity is low, it may be used in the dual capacity of a heat insulator and cushioning material. The material's maximum temperature usage is 175 deg. F.

Cushioning properties

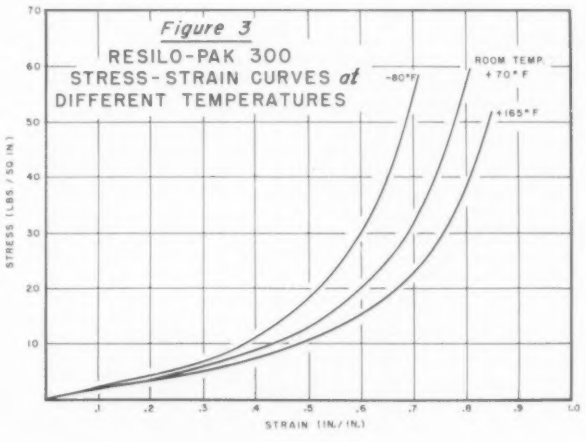
At best, the field of scientific cushioning and cushioning evaluation is in a state of transition. Five years ago, most cushioning materials were roughly compared and evaluated on the basis of their "static" stress-strain curves, following ASTM D1372-55T. These curves were obtained from load-compression machines of various kinds, with a compression head moving at speeds usually less than 2 in. per minute. In the last few years, cushioning materials have been evaluated dynamically by drop tests which were felt to be much more indicative of the actual use conditions of the cushioning. To this end, an ASTM Procedure, D1596-59T, has been issued during the past year and serves as a basis for a new Military Specification, MIL-C-26861, which attempts to classify the properties of cushioning materials from dynamic-load data.

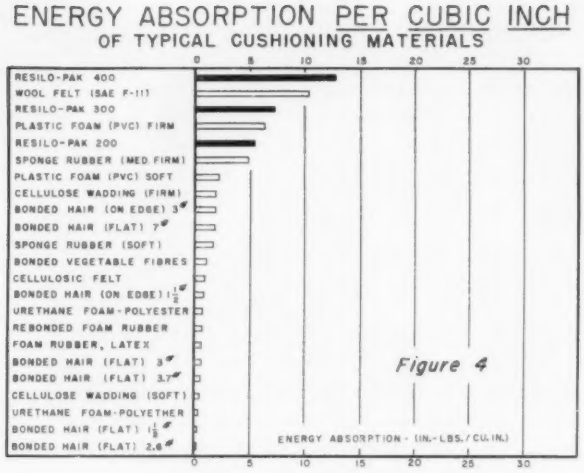
A discussion of these test procedures is beyond the scope of this paper. However, there is a good deal of controversy on the manner and nature of dynamic testing. There is question as to whether cushioning should be evaluated by allowing weights to fall on pads or whether cushioning materials should be evaluated within certain standard containers utilizing known weights and measuring devices. The nature of shock forces is not fully understood. One may find many questions and differing opinions on what constitutes shock and what causes items to break or be otherwise damaged. Some of the measuring devices commonly used in such testing are being questioned, from the accelerometer type to electronic equipment used to record the extent and duration of observed shock forces.

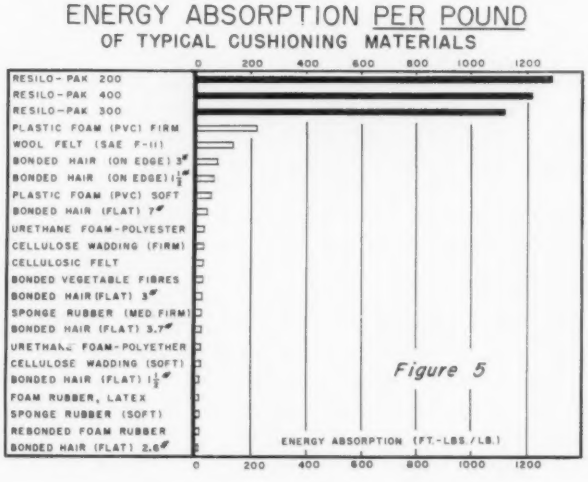
Against this background, the cushioning properties of Resilo-Pak have been evaluated. Static stress-strain data and curves were obtained on the material and a typical one, Resilo-Pak 300, is shown in Figure 3 (room-temperature curve).

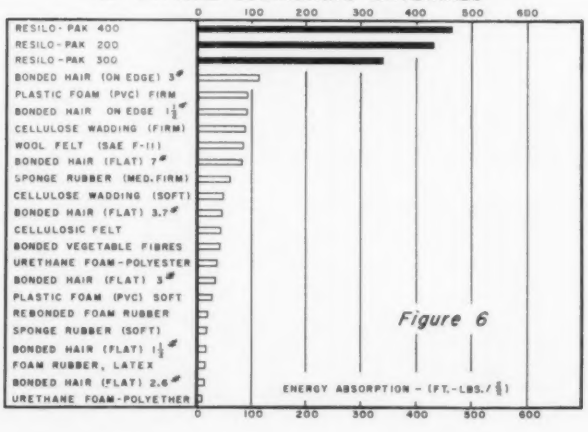
Compared with conventional materials commonly used, the new resilient foamed polystyrene is considerably stiffer and therefore capable of absorbing greater amounts of energy. The energy-absorption capabilities of a material can be defined as the area under the stress-strain curve for any given condition of stress and corresponding strain. For example, at 70 deg. F., if a stress of 30 lbs./sq.in. is applied to Resilo-Pak Type 300, a strain of approximately 0.7 in. per inch is induced. The energy-absorption capacity or area under the curve is determined to be slightly above 7 in.-lbs. per cubic inch. This capacity is considered quite high compared, for example, with the stiffest type of bonded-hair material, which has an energy absorption capacity of only 1.6 in.-lbs. per cubic inch.

It is at low temperatures that a truly important and rather surprising property of the new resilient foamed polystyrene is demonstrated. Unlike most materials, including some of the other foamed









plastics, the static stress-strain properties of this new material are not greatly affected by extremes of temperature normally specified by the Military—namely, minus 65 deg. F. to plus 165 deg. F. (Figure 3). This can be extremely important. In those climate areas where very low temperatures are experienced, other cushioning materials may become so stiff upon exposure that the item being protected may be damaged by relatively light shocks.

The type of cushion and thickness may be calculated or determined from static stress-strain data when the item weight, load-bearing area, height of drop and fragility are known. A number of graphic methods may be used and, within reasonable limits, such determinations appear to be sound and satisfactory as practical estimates of the cushioning requirements for specific loads.

In some cushioning applications the stiffness of this material may be too high. Where relatively low static loads with correspondingly low fragilities are specified, the stress developed by using the total bearing area of the item may be insufficient to cause enough deflection of a cushion of this material to assure the necessary level of protection. Nevertheless, the stiffness of the new resilient foamed-polystyrene materials can be a decided advantage if the bearing area of the cushion can be reduced. By using the material efficiently, actual reduction in volume of the cushion material is effected with substantial savings in cost. The only tempering factor is that of the practicality of using reduced bearing areas. However, corner pads or other fabrications can make such techniques feasible.

Another pertinent cushioning property usually neglected in descriptions of other cushioning materials is the change in thickness due to long-term static loading. To put it simply, it is important to know what maximum loading can be placed on the cushion without having the cushion change excessively in thickness as the package is stored for more than a few days. A number of terms have been given the property of cushion-thickness change due to static loading, such as "set," "drift," "creep" and "flow." Because it is customarily used in the plastics industry, the term "creep" will be used in this paper in preference to the others.

It appears reasonable to conclude that creep should be defined as the change in cushion thickness with respect to its original *loaded* thickness. Using this approach and arbitrarily allowing a maximum of 15% creep, recent but incomplete data indicate that static loadings of up to 1.5 lbs./sq.in. may be applied to Resilo-Pak 200 and 400, while up to 0.75 lbs/sq.in. may be applied to Resilo-Pak 300. It is to be noted that such maximum loadings are believed sufficient for most of the packaging of

delicate items. It appears that almost all static loadings for true cushioning problems are less than 1.0 lbs./sq. in. and that the majority of these are even less than 0.5 lbs./sq.in.

Comparisons

To demonstrate the superior stiffness and energy-absorption capacity of the new resilient foamed polystyrene, comparative bar graphs have been prepared from published data (static stress-strain curves) on other cushioning materials. See Figures 4 through 6. (NOTE: These data are based on static stress-strain curves and on other published information and price lists. It is recognized that, for some of the cushioning materials, dynamic properties may be substantially different from those observed on the basis of static load-compression data.)

Dynamic cushioning properties

"Dynamic" stress-strain curves are acknowledged to be more important in establishing the cushioning properties of a material, since obviously it is under dynamic conditions that the cushion is subjected to compression. Although there still remains some question as to the correct interpretation of shock and the other dynamic factors, preliminary data utilizing the procedure and test equipment specified in ASTM D1596-59T have yielded dynamic stress-strain curves for resilient foamed polystyrene which are similar to corresponding static stress-strain curves. An example is shown in Figure 7.

It is also desirable to evaluate cushions of known thickness by using a series of loads at a constant drop height to determine the "g's" which consequently are developed. It is then possible to draw a "g" versus static stress curve, an example of which is shown in Figure 8. If enough evaluations are made on a sufficient number of thicknesses and at different drop heights, performance of the cushion can be predicted with reasonable accuracy. A potential user can then merely pick out the necessary thickness (perhaps with interpolation) for the de-

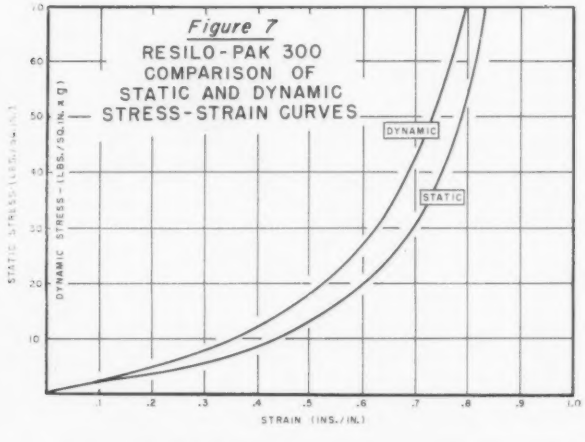
Table I: Typical physical properties of resilient foamed-polystyrene cushioning material

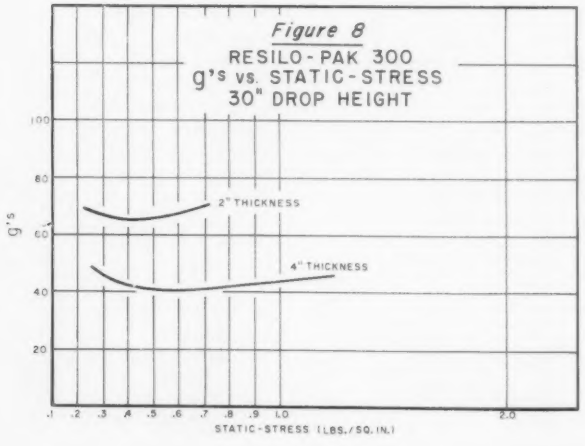
Property	*Units*	*Resilo-Pak 200*	*Resilo-Pak 300*	*Resilo-Pak 400*	*Test method*
pH	—	——— Neutral ———			ASTM D778-50
Free sulfur content	%	—— None detected ——			ASTM D297-50T (modified)
Upper temp. use limit	°F.	175	175	175	
Water absorption	% by volume:				MEP 94
	24 hrs.	2.5	1.8	3.7	
	6 weeks	3.7	5.2	6.9	
Thermal conductivity	Btu-in./hr.-sq. ft.—°F. @75°F. mean	0.29	0.27	0.23	MEP 99, ASTM C177-45
Thermal stability:	% linear shrinkage:				MEP 95
@158°F.	24 hrs.	0	0.4	0.7	
	6 weeks	0.1	0.6	0.9	
@200°F.	24 hrs.	0.5	2.2	5.8	
	6 weeks	1.3	6.6	8.8	
Coefficient of thermal expansion	In./in./°F.	0.6×10^{-5}	1.0×10^{-5}	0.6×10^{-5}	MEP 45, determined over temperature range of −108°F. to +140°F.
Abrasiveness	—	—— Non-abrasive ——			Consodidated Freight Classification Committee Procedure
Dusting	—	——— Negligible ———			Fed. Spec. PPP-C-843
Fungus resistance	—	——— Excellent ———			Reference (7)
Capillarity	—	——— None ———			Reference (7)
Thickness loss:					ASTM D-1372-55T (modified)
50% compression	%	9.9	4.5	4.3	(punch press)
70% compression	%	15.2	5.7	5.9	
Optimum stress	Lbs./sq. in.	20	30	60	ASTM D1372-55T (modified)
Optimum strain*	In./in.	0.6	0.7	0.7	ASTM D1372-55T (modified)
Energy absorption	In. lbs./cu. in.	5.8	7.2	13.2	ASTM D1372-55T (modified)

* These are average values. Strain may vary ±0.05 from the values listed.
NOTE: MEP—Material Examination Procedures used by Armstrong Cork Co. Further details available upon request. The data above are based on a limited number of tests and are subject to change as more information becomes available. It should be noted that this information is generally of a static nature. It will be amplified with dynamic information when tests now in progress are completed.

sired protection when all other conditions of design are known for the particular item. In any event, all of the dynamic data shown are preliminary and a full evaluation of the dynamic properties of this new resilient foamed polystyrene cushioning material is under way at the present time.

Another important consideration is that of cushion-thickness loss when subjected to loadings under the dynamic conditions which a package may experience. ASTM D1372-55T was followed in this case, except that the load was applied by means of a punch press, which very nearly represents dynamic-drop conditions. This load was applied 10 consecutive times and the cushion-thickness measurement made 30 min. after the 10 rapid loadings. For a 50% compression, the two stiffest materials, Resilo-Pak 300 and 400, lost less than 5%; the least stiff material, Resilo-Pak 200, lost approximately 10% of its original thickness. For a 70% compression, the two stiffest materials lost less than 6%; the least stiff material lost approximately 15%.





A similar determination of thickness loss was made from dynamic-drop tests in which the cushion-pad thickness was recorded after each drop series, according to D-1596-59T. After five consecutive drops, which subjected each specimen to comparable compression, "dynamic set" was found to be about the same as the thickness-loss test results described above. Refer again to Figure 2.

Fabrication and adhesives

Although it is not within the scope of this paper to describe fabricating techniques, some indication of material workability may be of interest.

The resilient foamed polystyrene can be cut and fabricated with the same common woodworking tools which have been used with rigid foamed polystyrene. These include band saws, circular saws, routers, planers, drills, sanders and the like. Hot-wire cutting and heated-die shaping can also be employed where desirable. Additionally, the new material can be readily die cut to precise shapes, as well as be sheeted or cut with knife-blade equipment (foam splitters) commonly used with other flexible and resilient foamed plastics.

Suitable adhesives for this material are generally those which do not contain solvents known to dissolve polystyrene. Such adhesives may include animal glues and their synthetic counterparts, water-emulsion types which may be either pressure sensitive or permanent, elastomeric types in naphtha solvent (containing no aromatics), as well as certain epoxies and other room-temperature thermosetting types. Also, hot-melt adhesives have been found to be suitable for use in certain cases.

Conclusion

A new cushioning material, resilient foamed polystyrene, with a series of unique and outstanding properties has been developed. A fresh approach to the problem of package-cushioning selection and design is now possible utilizing these basic properties, consistent with the practical aspects of each packaging problem and the economics of cushion volume, package cubage and labor requirements.

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*By L. B. Nelson and N. L. Malakoff**

New scuff test for wax coatings

Modified method provides accurate measurement by determining the gain in weight of a uniform cloth strip drawn a fixed distance between two fixed samples

The scuffing properties of wax coatings are of interest to converters and suppliers who are concerned with field performance and to laboratory investigators developing coatings to meet product requirements. The methods used to measure the scuffing of rubber, leather and plastics do not apply. The difficulty arises because enough heat is generated by continual abrasion with these methods to cause the wax to coat and lubricate the abrader and give results of poor reproducibility, especially between different laboratories.

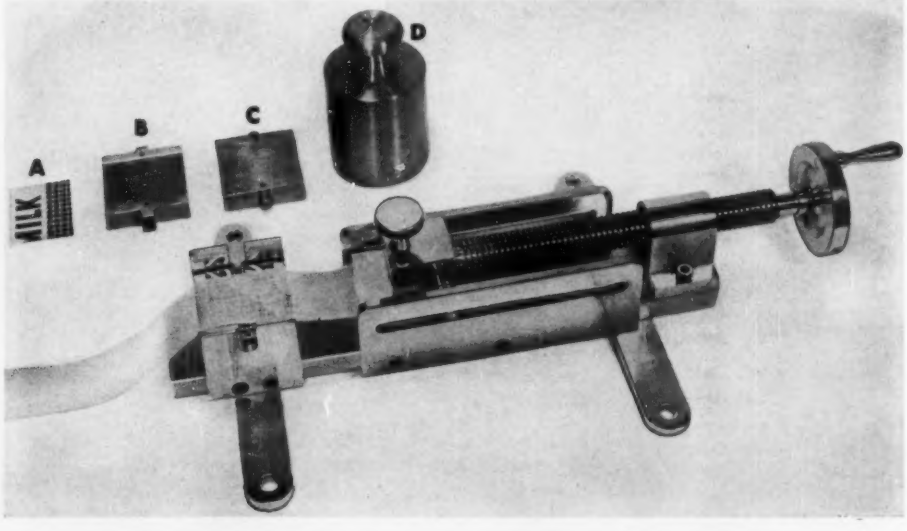
The procedure used to measure the scuffing of waxed surfaces in our laboratory is a modification of the test developed at Marathon, Div. American Can Co., Menasha, Wis., and presented for consideration as a standard test procedure by the TAPPI-ASTM Committee on wax testing.

At Marathon, the scuff of a wax coating is measured by determining the loss in weight of a coated paper strip drawn a fixed distance between serrated steel blocks. The blocks are compressed by a 2-kg. weight. This test rates typical bread-wrap formulations at about 1-2 milligrams of scuff with a precision of about ±10%. It is difficult to obtain scuffing blocks with identical serrated surfaces and reproducibility between different test apparatuses is not good.

The Socony Mobil test measures scuff by determining the gain in weight of a uniform cloth strip drawn a fixed distance between two coupons of wax-coated paper. A 2-kg. weight is used to compress the coupons against the cloth strip.

*Both authors are in the Brooklyn Laboratory, Research Dept., Socony Mobil Oil Co., Inc., Brooklyn 22.

Figure 1. *The new Socony Mobil wax-scuff tester showing (A) waxed coupon, (B) punch block, (C) compression block and (D) 2-kg. weight.*



The apparatus used for the test is shown in Figure 1. When used on dairy-carton coatings, coupons 1½ by 2 in. (A) are cut from the sides of a milk container or from a hand-coated coupon. Bread-wrap coatings and other coatings on flexible papers may be cut to the approximate size of the brass blocks and taped in place. The samples are held between two brass blocks. The bottom block, 2 by 2 in., is fitted with two small pins at the center of the outer edges which are used to puncture and hold the test coupons. Two top blocks 2 by 2 in. are used. One block (B) is used as a punch to force the test coupons over the pins in the bottom block. The center surface, about ¼ in. from the outer edges of the block, is recessed to prevent damage to the test surfaces of the coupons. Holes are drilled in this block to match the pins in the bottom block. The second block (C), of the same dimensions, but with a flat surface, is used to compress the coupons during the test. The sides of this block are extended at the center to fit into slots in the test apparatus to prevent the block from moving during the test.

The cloth strips used for the test are of 1½-in. surgical gauze. Gauze materials from Bauer & Black and from Johnson & Johnson have been tested and found to give identical results. The gauze is used in strips about 11 in. long so that the entire length is not drawn between the blocks. The length of the draw of the apparatus is 5⅛ inches.

Test procedure

Test coupons are cut from a paper roll, the side of a dairy carton or a hand-dipped panel. The test surface selected should be free of irregularities. Coupons 1½ by 2 in. are cut from heavy-type papers and boards, and forced over the pegs on the bottom block with the punch block. Lightweight papers are cut into strips 2 in. wide and taped to the top and bottom block with pressure-sensitive cellophane tape. A weighed strip of gauze about 11 in. long is clamped in the jaws of the gripper with the screw in the forward position. The end of the gauze in the gripper is wrapped around a thin metal strip before clamping to prevent uneven pulling. The gauze is placed between the two coupons on the bottom block, and the top block and 2-kg. weight are put in place. The screw is turned at about 120 rpm. to draw the gauze between the coupons. The gauze is weighed to the nearest 0.1 mg. and the scuff reported as the average of five trials made on different samples.

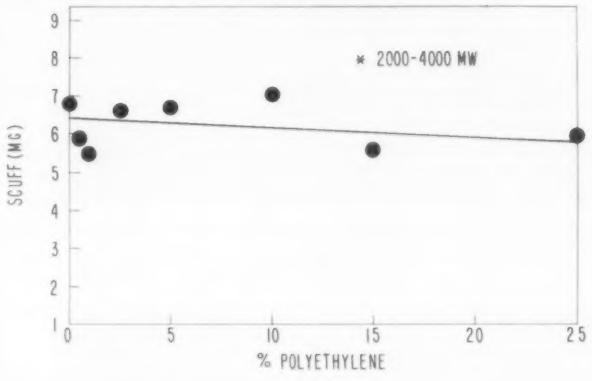
The test is performed on coatings aged for 24 hrs. at 70 deg. F. and 50% R.H. The precision of duplicate runs performed by different operators was found to be about ±0.5 mg. on smooth coatings free from irregularities. This precision was obtained with coatings that scuffed over a range of 2 to 20 mg.

Table I: The effect of polyethylene* on the scuff of a 138/140 AMP paraffin wax

Per cent polyethylene	*Scuff (mg.)*
0	6.8
0.5	5.9
1.0	5.5
2.5	6.6
5.0	6.7
10.0	7.1
15.0	5.6
25.0	6.0

*Molecular weight about 2,000-4,000.

Figure 2. The effect of polyethylene* on the scuff of a 138/140 AMP paraffin wax



Data

Table I lists the scuff of blends of 2,000-4,000 molecular weight polyethylene and a 138/140 AMP paraffin wax on bleached kraft paper. Figure 2 is a plot of these data. A similar listing and plot of scuff data for blends of a microcrystalline wax and the 2,000-4,000 M.W. polyethylene are in Table II and Figure 3. The data show that the scuff of these coatings of paraffin and polyethylene are independent of the concentration of the polyethylene over a concentration range of 0 to 25%. The microcrystalline wax shows more response to the addition of polyethylene and the scuff was found to decrease from 8.6 to 2.2 mg. as the polyethylene content was increased from 0 to 25%.

Table III shows the effect of hardness of the wax on the scuff of the coatings. Wax A is a 125/127 AMP paraffin and Wax B is a paraffin of higher melting point fractionated from a residual oil. The relation of scuff and penetration of these blends is almost linear except at the very lowest penetration. This relationship is generally true for blends of paraffin wax. However, factors other than needle-

penetration hardness influence scuff and penetration values alone may not be used to predict the scuff of isolated blends.

Table IV summarizes some scuff data for several waxes and wax-polyethylene blends. The data show a decrease in scuff with increase in melting-point grade. Polyethylenes of 2,000, 8,000 and 12,000 molecular weight do not decrease the scuff of dip coatings of a 125/127 AMP paraffin wax in amounts up to 5%. Ten per cent of the 12,000 M.W. polyethylene does reduce the scuff of this wax. The bread-wrap coating which is a blend of the components shown has a much lower scuff than either wax alone or blends of the paraffin and polyethylene.

Discussion

The method described is a quick and simple way to measure the scuff of wax coatings. The principal advantage over other tests is that abrasion is by a continually renewed surface. This prevents the wax built up on the abrading surface from interfering with the precision and value of the test. The surgical gauze used was found to be a reproducible scuffing surface. Other scuffing surfaces such as strips cut from home screening or other fabric may also be used. Changes in the load compressing the test coupons or in the length of gauze drawn between the coupons may be made to simulate different conditions. A motor-driven screw may also be used.

The data presented show that low-molecular-weight polyethylene does not reduce the scuff of wax up to 25% polyethylene, but does reduce the scuff of microcrystalline wax over the same concentration range. This different behavior of the two waxes may be due to the different nature of the constituents of each and their effect on crystallization. Paraffin wax is largely composed of normal paraffins and is highly crystalline in the solid. The tensile strength of paraffins may be increased by the addition of polyethylene. Microcrystalline wax is more amorphous. The constancy of scuff over the range of polyethylene concentration suggests polyethylene is not on the surface of the coating. This would be possible if the polyethylene formed nuclei which were then coated by lower-melting crystalline paraffin. The reaction of the wax to polyethylene is regular and is, as would be expected, by simple replacement of wax by polyethylene. Because of the low crystalline nature of the microcrystalline wax components they are not influenced on crystallization by the polyethylene nuclei.

Table II: The effect of polyethylene* on the scuff of a microcrystalline wax

Per cent polyethylene	*Scuff (mg.)*
0	8.6
0.5	8.3
2.5	8.3
5.0	8.7
10.0	5.5
15.0	4.8
25.0	2.2

*Molecular weight about 2,000-4,000.

Table III: Scuff and penetration of wax blends

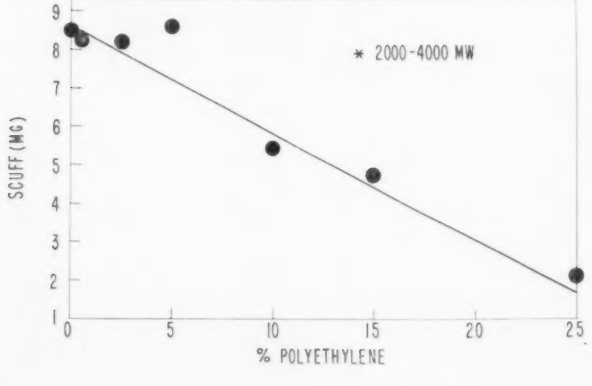
Composition		*Scuff*	*Penetration*
Wax A	*Wax B*	*(mg.)*	*@77°F., 100 g., 5 sec.*
100	—	14.0	25½
70	30	6.8	16½
50	50	2.8	12½
30	70	1.7	7
—	100	1.2	3½

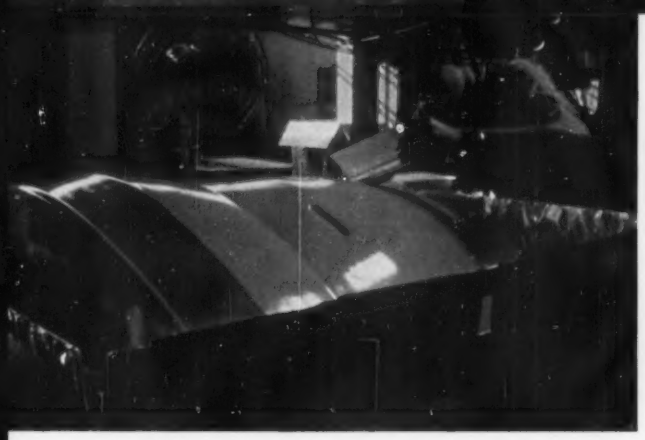
Table IV: Scuff values for several waxes and wax-polyethylene blends

	Scuff (mg.)
Wax A[1]	14.0
Wax C[2]	8.0
Wax D[3]	6.0
Wax A + 5% polyethylene (2,000 M.W.)	17.0
Wax A + 5% polyethylene (8,000 M.W.)	15.0
Wax A + 3% polyethylene (12,000 M.W.)	17.0
Wax A + 10% polyethylene (12,000 M.W.)	7.0
Microcrystalline wax	8.6
Typical bread-wrap formulation[4]	2.5

[1]125/127 AMP paraffin.
[2]138/140 AMP paraffin.
[3]155/157 AMP paraffin.
[4]48% Wax B, 48% microcrystalline wax, 4% 12,000 M.W. polyethylene.

Figure 3. The effect of polyethylene* on the scuff of a microcrystalline wax

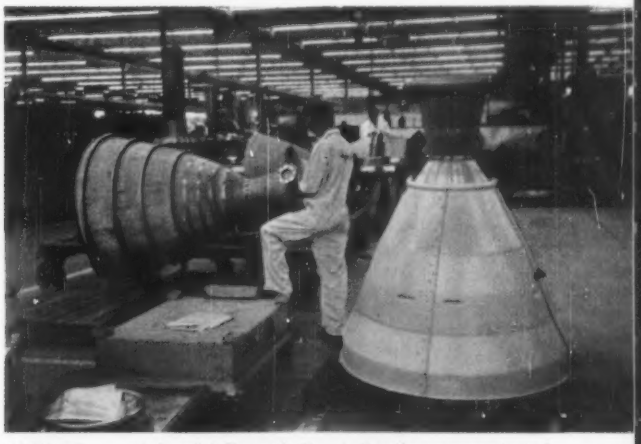




THERMOFORMING . . . Pull-down of vacuum form occurs at about 375°F. Operator is shown stamping serial number on cover half during cooling cycle.

FINISHING . . . After trimming, rubber shock strips are applied with epoxy adhesive. Flame treating oxidizes and prepares desired surfaces for adhesive.

ASSEMBLING . . . Hardware is mounted and finished cover inspected. Notice circular base with perforated desiccant container.



PACKING . . . at Aerojet-General, thrust chambers are protected for shipment. Protective covers remain on until firing.

Rocket Engine Covers Thermoformed from MARLEX* Sheet

This unique packaging item, made by Thermo-Plastic Products Company of San Carlos, California, protects the first- and second-stage thrust chambers of the Titan missile during missile assembly and shipment . . . right up to actual firing. Initially, these covers were glass fiber laminate. Now, using MARLEX 6002 High Density Polyethylene, Thermo-Plastic does the job at considerably less than the previous cost—providing lightweight covers with high impact strength . . . free from warpage and cracking . . . and chemically resistant to fuels, lubricating oils, greases, solvents, alkalies, detergents, and most acids.

This rocket engine cover is a good example of what can be done as a result of the superior thermoforming characteristics of sheet made of MARLEX. Here, Thermo-Plastic draws to a maximum depth of 22 inches the 54″ x 48″, 230-mil sheet supplied by Kal Western Plastics, Inc., Pico Rivera, California. Cover halves and circular bases are separately formed, yet mate perfectly when assembled to provide a gasket seal against moisture.

If you are interested in heavy-duty, large or small shipping containers . . . or such items as tote boxes, refrigeration liners, dome covers, trays, any item involving the structural forming of sheet—MARLEX can be your answer for improved quality at less cost. Thick and rigid, thin and flexible, large or small, the superior physical characteristics of MARLEX sheet permit precision thermoforming to accurate dimensional tolerances. Moreover, there are many MARLEX resins to choose from—providing a wide range of material properties.

For complete details on thermoforming and a list of MARLEX sheet suppliers near you . . . contact one of the offices listed below.

*MARLEX is a trademark for Phillips family of olefin polymers.

PHILLIPS CHEMICAL COMPANY, Bartlesville, Oklahoma, a subsidiary of Phillips Petroleum Company

PLASTICS DIVISION OFFICES

NEW ENGLAND	NEW YORK	AKRON	CHICAGO	WESTERN	SOUTHERN
322 Waterman Avenue	80 Broadway, Suite 4300	318 Water Street	111 S. York Street	317 N. Lake Ave.	6010 Sherry Lane
East Providence 14, R. I.	New York 5, N. Y.	Akron 8, Ohio	Elmhurst, Ill.	Pasadena, Calif.	Dallas 25, Texas
GEneva 4-7600	Digby 4-3480	FRanklin 6-4126	TErrace 4-6600	MUrray 1-6997	EMerson 8-1358

EXPORT: PHILLIPS PETROLEUM INTERNATIONAL CORPORATION • P. O. Box 7239, Panama City, Panama • Sumatrastrasse 27, Zurich 6, Switzerland

PHILLIPS 66 MARLEX

Questions & Answers

This consultation service on technical and engineering packaging subjects is at your command. Simply address your questions to Technical Dept., Modern Packaging, 575 Madison Ave., New York 22, N. Y. Your name or other identification will not appear with any published answer.

Minimizing moisture pick-up

Q: *We package a soluble powder in a small, four-side-heat-sealed pouch made from a plastic-coated paper. As a control on our packaging-machine operation, we test the filled pouches under water and a slight vacuum to observe air leakage from the seals. Our production shows almost no air leakage by this test, yet we continue to get some complaints and returns because of moisture caking. We developed this test because we thought that if we had a tightly sealed package, the moisture pick-up would be very slight and unimportant. The question is, what better test can we use to indicate package tightness, or should we change to the use of another packaging material?*

A: The test you are using is an effective way to check the mechanical tightness of your seals and the operation of your machine. Wrinkles, under- or over-heated sealers, and bad alignment can be checked by this test. Only very low vacuum should be used—and this slowly applied. A high or sudden vacuum will cause air leakage that has no correlation with good machine or material performance.

However, this test has no relationship to the moistureproofness of the pouch or the material used. Even though you are making mechanically tight and strong seals, moisture is entering the package through the walls of the package—that is, through the material itself.

You should determine by storage tests the water-vapor transmission rate of the package material which is necessary to protect this product in field use. Sample packages can be made up from materials of various levels of moistureproofness as measured by their water-vapor transmission rates. This range of sampling should include an aluminum-foil lamination, since this will give nearly a zero moisture pick-up of the package. These tests can be accelerated by conducting them at 100 deg. F. and 90% R.H. After you have seen the relative moistureproofness of your present package, you can make a market test of one or more of the better materials tested.

After you have determined a suitable packaging material, you should purchase it under a specification which can be developed jointly by you and your material supplier. When you use a material of sufficient moistureproofness and your present test for mechanical tightness, the complaints and returns due to caking will be minimized.

Liquid-tight pouches

Q: *One of our packages is a Mylar-polyethylene pouch for pickles in brine. This package can be made with strong and tight top seals using a hand-feed, jaw-type heat sealer. Occasionally we have trouble with weak seals and leakage. How can we improve and maintain the uniformity of the top seal on this package?*

A: A Mylar-polyethylene laminated or coated material is capable of making strong liquid-tight seals if the seals are made under proper conditions. First, care must be taken to keep the brine from getting into the sealing area before or during the heat-sealing process. If this occurs, weak or leaking seals will result. Next, the sealers should be adjusted to a moderate jaw pressure, since excessive pressure can force the fused polyethylene out of the sealing zone. Also, the heater thermostats should be checked periodically for both proper temperature setting and uniform operation. Such inspection and adjustments will insure the maximum performance for this type of heat sealer.

However, you should consider other types of heat sealers that are basically more suitable for this material and for this type of product.

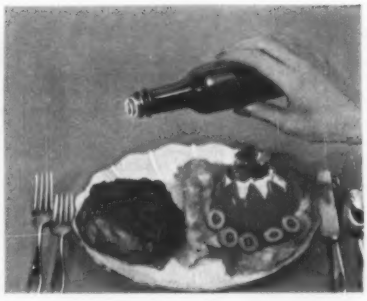
An impulse jaw-type, or a continuous belt- or band-type sealer will allow the polyethylene to cool in the heat-sealed area before the package is removed from the sealer. This means that the seal is not distributed while the resin is melted, giving added assurance of liquid-tight seals of maximum strength.

Versatile pouch packaging

Q: *We would like to use a form-fill-seal pouch-packaging machine for both powdered and solid products. Is there any one machine that can handle both of these products at good speed and with a variety of packaging films?*

A: The limiting factor in your problem is the size of the solid objects. There are several pouch-packaging machines in commercial use that will handle both powders and small solids, ranging up to about 1 in. in diameter. These vertical form-fill-seal units operate at from 60 to 75 packages per minute per head and can be obtained with up to four heads for speedy output. Naturally, the feed mechanisms for powders and solids are different—weighing buckets and vibratory feeders generally being used for solids and auger-type feeders for powders. But a tandem-feed arrangement or quick-change heads can, no doubt, be practically adapted to solve this problem of dual products. The pouches for the two types of products should be relatively close in size, however, since radical change-overs take an excessive amount of set-up time and necessitate expensive change parts.

For larger solid objects, a horizontal pouch-packaging machine is more practical. There are a number of these on the market with operating speeds up to 150 packages per minute. Automatic-feed devices are available, or the unit may be hand fed.



Easy-to-grip containers for detergents . . . handy fitments for deodorant applicators . . . no-drip spouts for sauce bottles

Owens-Illinois skill in plastics takes many shapes to serve you

Owens-Illinois a plastics company? More than that. We're a packaging company. Working with plastics, glass and paper, we help solve customers' packaging problems. For hundreds of Owens-Illinois customers, *plastic* packaging proves to be the best answer.

For example, today many liquid detergents are packaged in the type of lightweight semi-rigid polyethylene bottles we introduced only four years ago. This new field of packaging is growing at a tremendous rate. Long experience in both packaging and plastics has enabled Owens-Illinois to establish leadership in this field.

To discover the possibilities of plastic containers and fitments, look to Owens-Illinois.

PLASTIC PACKAGING
AN (O) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES · TOLEDO 1, OHIO
PACIFIC COAST HEADQUARTERS · SAN FRANCISCO

Plants & People

William C. Stolk has been elected chairman and chief exec. officer of **American Can Co.**, New York. **Roy J. Sund** has succeeded him as pres. of the company. Mr. Stolk, who joined Canco in 1916, was elected exec. v.p. in 1949. He became pres. in 1951. A director of the company and v.p. in the corporate executive dept., Mr. Sund was formerly gen. mgr. of the **Marathon Div.** He had been with Marathon 33 years when the Wisconsin firm merged with Canco in 1957. **Donald A. Snyder** has assumed Mr. Sund's former duties. He also becomes a v.p. in the corporate executive department.

Stolk *Sund*

Risdon Mfg. Co., Naugatuck, Conn., has established a Plastics Div. The company plans to expand the new operation, which is now producing components of nylon, polyethylene, polystyrene and acetal resin. Valve actuators, cores, cups and dust covers for the aerosol div. are among the new div.'s current output, as well as items for the company's notions and cosmetics divs. Risdon also will manufacture plastics commodities for other companies. The company estimates that its new Plastics Div. will account for 25% of the Naugatuck plant's output by 1965.

William A. Graves is the new advtg. and promotion mgr. of **Clupak, Inc.**, New York. He succeeds **K. N. Bacon**, who resigned recently. The company owns patents and trademarks for the production of Clupak extensible kraft.

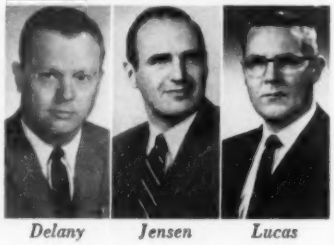
Robert P. Eganhouse is named to head the new graphic-design assistance group recently established by **Aluminum Co. of America**, Pittsburgh. The new program provides advice and assistance to designers and manufacturers in the areas of graphic and package design and handles Alcoa's own needs in the field of graphics. Mr. Eganhouse was formerly designer and art director for **Container Corp. of America.**

Fiber Strap, Inc., has been formed as a joint venture of **Chicago Printed String Co.**, Chicago, and **A. J. Gerrard & Co.**, Des Plaines, Ill. **Sol S. Weiner**, pres. of Chicago Printed String, and **J. B. Gerrard**, pres. of A. J. Gerrard, will serve as pres. and v.p., respectively, of the new firm, which will market new developments for strapping and bundling with materials other than steel and wire. A machine which applies a new, heavy-duty rayon tape designed to replace wire and steel strapping in many packaging and bundling operations, will be the first item marketed by the firm.

Edward L. Mears becomes a v.p. of the **Dewey & Almy Chemical Div.** of **W. R. Grace & Co.**, Cambridge, Mass. Mr. Mears, who was gen. mgr. of the Container & Chemical Specialties Div., retains that responsibility. Since joining Dewey & Almy in 1930, he has been closely associated with the firm's manufacturing operations. **George B. Kafka** becomes Midwest sales mgr. of container and industrial products.

Glenn Stewart is the new director of advtg. of **KVP Sutherland Paper Co.**, Kalamazoo, Mich. **Wallace Power** continues as advtg. mgr. of Sutherland, reporting to Mr. Stewart.

John F. Delany has been named mgr. of can sales for **Kaiser Aluminum & Chemical Sales, Inc.**, Oakland, Calif. He will be responsible for sales of aluminum stock to can manufacturers. He had been serving as can sales rep.



Delany *Jensen* *Lucas*

in New York City. **Robert P. Jensen** has been appointed mgr. of industrial foil, laminations and containers for **Kaiser Aluminum & Chemical Corp.** **Robert H. Lucas** has been named to succeed him as industrial foil and container sales mgr. Mr. Jensen is now responsible for both the production and sales of Kaiser Aluminum & Chemical's industrial foil line.

Norman L. Freydberg has been elected pres. of **Acme Backing Corp.**, Stamford, Conn. He succeeds **Ralph M. Freydberg**, now chairman of the board. Other officers elected include **Everett R. Jenkins**, senior v.p., and **Melvin Wagner**, v.p.

R. M. Paulsen becomes director of research for the Plastic Bottle & Tube Div. of **Continental Can Co.**, New York. **J. C. Barthel** becomes gen. mgr. of the Research & Development Dept. of Concan's Bondware Div. **H. Merrill Goodwyn** has been appointed Southern regional mgr. for the bag and paper operation of Concan's Containerboard & Kraft Paper Div. He succeeds **James H. Quinn**, resigned.

Emerson W. White has joined the company's Flexible Packaging Div. as mgr. of market research and sales analysis. A reorganization of assignments in the div. includes these appointments: **Martin L. Schechtman**, to mgr. of laminated products; **Fred S. Hinkle**, to mgr. of paper products; **Fred Winslow**, to mgr. of film products; **R. George Buchanan**, to product sales mgr.—paper; **Alex W. Schlop**, to product sales mgr.—laminations; **Walter C. Curtis**, to product sales mgr.—films; **Thomas A. Porter**, to mgr. product development—laminations, and **Norman S. Hewitt**, to mgr. product development—films. All appointments are now effective.

Bloomer Bros., carton manufacturer and converter, Rochester, N. Y., has been merged with **Riegel Paper Corp.**, New York. Bloomer will be operated as a div. of Riegel under its present management. The new acquisition, according to Riegel, will strengthen the parent company's position in ice-cream and egg packaging and will contribute cartons not made by Riegel.

With the recent purchase of Plastic **Horizons, Inc.**, Paterson, N. J., and Batavia, Ill., polyethylene-film producer, **Celanese Corp. of America** has broadened its plastics-packaging product line. Two executives of the newly acquired firm, now part of the Celanese Plastics Co. Div., have received new assignments. **William C. Leipold**, pres. of the former Plastic Horizons, is now mgr. of polyethylene production of Celanese Plastics Co. and **Maurice Brown**, formerly v.p. and secy., has been named mgr. of polyethylene film sales.

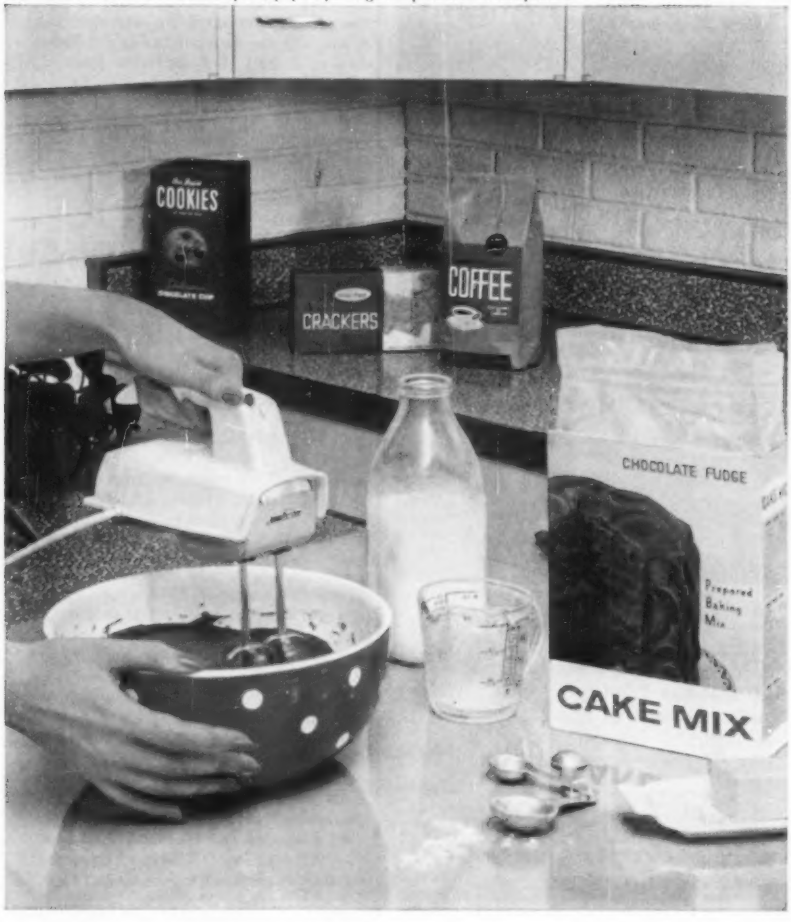
American Can Co., New York, plans to manufacture and market glass containers, with an initial investment of $6,000,000. In a prospectus filed with the Securities & Exchange Commission, the company reports that it will receive management services and technical assistance from **Wheaton Glass Co.**, Millville, N.J. American Can's glass-container operations will be conducted through **American-Wheaton Glass Corp.**, a majority-owned subsidiary, with Wheaton as the other stockholder, it is reported.

New sales mgr. of the Chemicals Div. of **Eastman Chemical Products**, Kingsport, Tenn., is **John H. Sanders**. He was formerly a regional sales mgr. for ECP, the marketing sub. of **Eastman Kodak Co.**'s **Tennessee Eastman** and **Texas Eastman** divs. Mr. Sanders succeeds **Guy A. Kirton**, now handling international sales of Tennessee Eastman and Texas Eastman. ECP's Chemicals Div. also reports a re-alignment of the Eastern and

Sanders

beat well... goes for paper making, too

Rhinelander Glassine and Greaseproof papers package the products in this picture



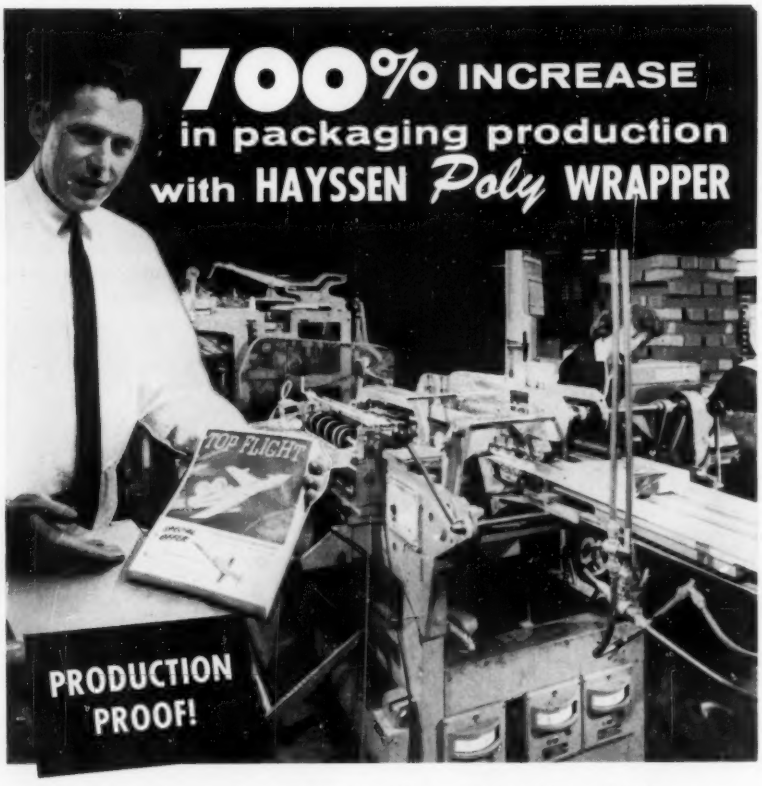
Beat Well says the recipe – and the housewife who knows her cakes knows the importance of beating. And beating is equally important in the making of the high density wax laminated liners that protect cake mixes. These and a host of other time-saver foods are packaged in Glassine and Greaseproof papers . . . the wonder papers of modern packaging. Write for complete information stating your particular application.

In making Glassine and Greaseproof at Rhinelander, beating is a meticulously controlled process, considerably lengthened to transform the cellulose fibres into tiny strands, later tightly compacted on the paper machine. The microscopic fibrillae give Glassine and Greaseproof its density, its greaseproofness, and versatility.

These tight, dense papers keep foods fresh – resist greases, oils and fats–retain aromas, and protect flavor and quality.

RHINELANDER
Rhinelander Paper Company • Rhinelander, Wisconsin
Division of St. Regis Paper Company

GLASSINE AND GREASEPROOF... *PAPERS FOR PROTECTIVE PACKAGING*



This Hayssen Wrapper allowed Top Flight Paper Products, Inc. of Chattanooga, Tenn. to increase its packaging production by 700% according to Mr. Montgomery Robinson, Vice President, Sales. Present production is 1,500 packages per hour as compared to the 180 average rate of the older system. Purchased to operate a mere 16 hours a week, the greater demand for the new poly package increased machine use to 120 hours.

HAYSSEN — WRAPPED poly packages give your customers these important advantages

■ **LONGER SHELF LIFE**

Polyethylene lasts longer, protects longer than any other low cost transparent wrapping material. Keeps products fresh and clean indefinitely.

■ **TAMPER-PROOF PACKAGES**

Sheets cannot be removed without destroying package. Hayssen wrapped poly-paks are sealed on all sides.

■ **CUSTOMER ACCEPTANCE**

Neat, clean Hayssen-formed packages sell fast, gain customer confidence in product.

first in Automatic Packaging since 1910

HAYSSEN

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Plants & People [*Cont'd*]

Midwestern regional sales territories. The region formerly supervised by Mr. Sanders (North Central and Southeast) has been divided between the Midwestern and Eastern regional offices. The former is managed by **Decatur B. Campbell**, the latter is under the direction of **Robert H. Cannon.**

Thomas A. Hanna has been appointed advtg. mgr. for **The Kordite Co.**, plastics, Macedon, N. Y. **Charles V. Trawick** and **Robert D. Fletcher** have been named district sales mgrs. for the company's Industrial Div. Before his current appointment, Mr. Hanna was asst. product mgr. in the division. Kordite is a div. of **National Distillers & Chemical Corp.**, New York.

Berry

Chapman Berry has been appointed mgr. of advtg. and sales promotion of **Robertson Paper Box Co.**, Montville, Conn. Formerly with **William Zinsser & Co.**, Mr. Berry has been active in packaging and merchandising for the past ten years. He has also been associated with the **Old Dominion Box Company** of Charlotte, N. C.

Container Corp. of America, Chicago, has announced new assignments for three of the company's v.p.'s who now headquarter in the Chicago main office. **Thomas F. Cass** has been named v.p. in charge of folding-carton operations and also is responsible for the **Sefton Fibre Can Div. Harry E. Miles** has been named v.p. for corrugated operations and **Frederick S. Crysler** has been assigned responsibility as v.p. of paperboard mills. **Henry G. Van der Eb**, a v.p. of the company, has been placed in charge of all folding-carton operations and will report to Mr. Cass. He will continue to serve as marketing-center director and will maintain headquarters at Valley Forge, Pa.

Schur

Milton O. Schur has been named v.p. for research of the Packaging Div. of **Olin Mathieson Chemical Corp.**, New York. **Dr. David C. Lea** will succeed him as director of research and development for the div.'s **Ecusta Paper** operation. Dr. Lea's former position as director of research and development for the div.'s forest-product operations in West Monroe, La., will be taken over by **Dr. Thomas Zentner.**

J. D. Winter, associate professor of horticulture in charge of the food-processing laboratory at the **University of Minnesota**, has retired. An expert in freezing foods, Prof. Winter began experimental work in this field more than 23 years ago. He was responsible for important research on various types of packaging for meats, poultry, produce

and pre-cooked foods preserved by freezing. He was editor of the *Minnesota Fruit Grower*, and on the editorial staffs of both the *The Farmer* and *Minnesota Horticulturist* magazines. He also has been a frequent contributor to the technical section of MODERN PACKAGING. Prof. Winter has received many honors in acknowledgement of his research work on the processing and packaging of food for freezing.

Crandall

Larry Crandall has been assigned to the newly created post of director of research and development of **Lawry's Foods, Inc.**, Los Angeles. He will continue as asst. to the pres., a post he has held for several years. Mr. Crandall will be primarily concerned with coordinating the development and packaging of the company's food products. He has been with Lawry's since 1949.

Stevens A. Bennett has been elected chairman of the board of **Bennett Industries, Inc.**, Peotone, Ill. **Anthony J. Gasbarra**, formerly exec. v.p., succeeds Mr. Bennett as pres. The company makes steel and fibre drums and pails.

Samuel B. McFarlane, Jr., has been named to the newly created post of v.p. of research for **Sun Chemical Corp.**, New York. According to the company, a new research-expansion program will provide entry into new fields and the development of new products. Mr. McFarlane was formerly mgr. of central research laboratories for **Celanese Corp. of America** and v.p. and technical director of **Onyx Oil & Chemical Co.**

Automatic Molded Plastics Co., Inc., located at 4628 N. Washington Blvd., Chicago, was recently organized by **Morris Nozette**, pres. **Bernard Willow** is v.p. The new firm will specialize in injection and blow molding. Mr. Nozette is also pres. of **Bradley Associates, Inc.**, and **Ace Plastic Molding Co.** The new firm is now in full operation.

Jerome Eisenberg is now design director with **Gerald Stahl, Inc.**, industrial designer, New York. Formerly associated with **Lippincott & Margulies**, Mr. Eisenberg will be engaged in assignments in the field of packaging and corporate identity.

Hilgeman

Richard Hilgeman has been appointed mgr. of the **Climax Products Div.** of **The Lodge & Shipley Co.**, Cincinnati. Climax Products, which makes bottle-handling and packaging equipment, was acquired by Lodge & Shipley in 1958. Mr. Hilgeman, Climax Products sales mgr. at the time of the merger, is now responsible for over-all management of the division.

Thatcher Glass Mfg. Co., New York, has purchased the **Toledo Mould Co.** of Toledo, O. The 40-year old Toledo firm, producer of molds for the glass-container industry, will be operated as a sub. of Thatcher Glass, with manufacturing operations and personnel remaining unchanged.

H. F. Henriques, Jr., has been appointed Eastern district mgr. of white converting-paper sales for **West Virginia Pulp & Paper Co.**, New York. **Willard F. Kuebler** has been assigned to the company's Chicago office, to take over the duties of Midwestern district mgr. from **John P. Glezen**, who is retiring. Mr. Henriques, formerly a sales rep. in the New York office, joined Westvaco in 1954. Mr. Kuebler has been with the company for 25 years.

James Farrell has been appointed pkg. coordinator for **The Mennen Co.**, Morristown, N. J., toiletries packager. He reports to the product-development mgr.

William B. Jensen, district mgr. of the Grand Rapids plant of **Mead Containers Div.** of **The Mead Corp.**, Dayton, O., has retired. He has been succeeded by **Jack A. Jensen.** William Jensen was one of the founders, in 1944, of the **Grand Rapids Container Co.** He served as pres. of the company until its acquisition by Mead in 1958. Jack Jensen will continue to serve as plant sales mgr. in addition to his new duties.

Horace C. Lockwood has moved up to chairman of the board of **New Era Mfg. Co.**, Hawthorne, N. J. C. **Richard Fairlamb** has succeeded him as pres. Mr. Fairlamb was formerly treas. and gen. mgr. His duties as treas. have been assumed by **William C. Atkins.** The company, which manufactures printing presses, including label printers, is celebrating its 60th anniversary.

Lockwood *Fairlamb*

Dean Wellington has been appointed gen. sales mgr. of **Gilman Paper Co.** and its subsidiaries. He will supervise activities in the Standard Products Div., Specialty Paper & Pulp Div., Multiwall Bag Div. and Bleached Board Div. **Harry C. Lawless** has become a staff v.p. of the company and its subsidiaries and a member of the executive advisory committee.

Ray Grove has become a full partner in the industrial-design firm of **William C. Renwick** and **Peter Thomson.** The company, now named **Renwick, Thomson & Grove** of 1 E. 54 St., New York, is offering a complete industrial design service as well as product, package and exhibit design. Mr. Renwick established the firm in 1957.

Several hundred employees are already settled in **Union Carbide Corp.'s** new 52-story home-office building at 270 Park Ave., New York. Complete occupancy, expected this fall, will consolidate the organization's various offices.

[*Continued on page 138*]

Trouble?

NO SIR! This is a WOODMAN.

The clean, simple engineering, fine materials and precision manufacture of Woodman weighing and packaging equipment insure top production, extreme accuracy, low down time and virtually trouble free service. This combination plus greatly reduced operator fatigue means high profit for Woodman equipped firms.

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Garden Supplies
ELECTRIC CLOCK
GLOVES
GARDEN
GARD
GI

How to put a show on the road

Charles "Chuck" Newman is an old hand at packaging showmanship. And an extraordinarily versatile one, too. As Union-Camp's Art Director for 26 years he's helped develop successful package designs for a wide variety of products.

"Chuck" and his talented team operate on the premise that every shipping container should be a traveling salesman for the products it carries as well as for the company that ships them. And there's certainly no lack of prospects. The average corrugated box, in its travels, meets hundreds of people and makes thousands of impressions. Yet its valuable billboard space often is neglected.

Distinctively designed boxes, as "Chuck" has demonstrated over and over, can work in dozens of ways. To merchandise a brand name—help create an image or personality for the product. Or, to tie-in with special or seasonal promotions. To dovetail with other advertising. To develop dealer preference by simplifying and speeding identification in inventory control. And through the combination of structural and visual design, to serve as eye-catching, easy-to-assemble display pieces—right at the point of sale.

But remember, designing art and print copy for corrugated boxes is a job for experts. It's an exacting medium to work with. How well your design succeeds depends, to a great extent, upon how well the artist knows the intricacies of the process and how to get the most out of it. "Chuck" Newman has a lifetime of experience in getting "the most" out of paper packaging and his staff is trained to his own high standards.

Your Union-Camp corrugated box representative is your passkey to more effective use of printed corrugated boxes. He'll be happy to show how they can be of value to you. A note on your letterhead will bring him to your office.

UNION-CAMP®

CORRUGATED BOXES

Union Bag-Camp Paper Corporation · 233 Broadway N.Y. 7, N.Y.

Plants: Savannah, Georgia · Trenton, New Jersey · Chicago, Illinois · Lakeland, Florida · Spartanburg, South Carolina · Jamestown, North Carolina
Subsidiaries: Allied Container Corporation, Dedham, Massachusetts
The Eastern Box Company, Baltimore, Maryland.

BRAUN

a bottle by...

Bain d'Or Bottle Designed for Lentheric by W. Braun Co.

GLASS AND PLASTIC BOTTLES AND CAPS SINCE 1909

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NEW YORK, N. Y. 47 West 34th Street LOngacre 3-2262

ST. PAUL, MINN. 1835 University Ave. Midway 4-3531

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Plants & People

[*Continued from page 135*]

which have been located in 14 different New York buildings. A feature of the new edifice is a "Hall of Science" which houses changing scientific and industrial exhibits.

Clemons H. Davis has been named packaging sales mgr. for the Pacific region of **Reynolds Metals Co.**, Richmond, Va. He succeeds **Hayden C. Clement**, who has been named sales promotion mgr. for the region. Mr. Davis, who will headquarter in Los Angeles, was formerly Reynolds' Eastern regional pkg. sales manager.

Paul Rogers Associates, Norwood, N. J., industrial-management consultant, has purchased **Stuyvesant Engineering Co.** of Lyndhurst, N. J., manufacturer of volumetric vibratory package-filling machinery. The new acquisition will be operated as **Stuyvesant Engineering Corp.** and will be located in Norwood. **Paul I. Rogers**, senior consultant with Paul Rogers Associates, will serve as pres. of Stuyvesant Engineering Corp. **E. J. Armelin** has been named v.p.

Lawrence V. Rhea has been appointed v.p. in charge of sales for **Imco Container Corp.**, a div. of **Rexall Drug & Chemical Co.** At the same time, **Frederick L. Kocher** becomes v.p. in charge of mktg. Mr. Kocher, who was in charge of Imco's Chicago office, is now responsible for advertising, sales promotion and market research as well as the development of a wholesale div. to market standard containers.

Rhea *Kocher*

August G. Oberland has joined **Norman Albin & Associates, Inc.**, Chicago, as gen. mgr. The company rebuilds box-making equipment. Mr. Oberland has spent 27 years in the industry.

James A. Engelmann has joined **Emerson/Johnson/Mackay, Inc.**, as director of packaging. The industrial-design company is located in North Hollywood, Calif. Mr. Engelmann was formerly art and packaging director for the Paper Mate Div. of Gillette Co.

S. Whitney Dickey becomes mgr. of distributor sales for **Dodge Fibers Corp.**, Hoosick Falls, N. Y. **William Petitt** has been named mgr. of technical sales. Both men will locate at Hoosick Falls.

Sun Chemical Corp., New York, has opened its 39th regional ink manufacturing plant, in Cincinnati. **Robert Reid** has been named mgr. of the new set-up, which will serve parts of Ohio, Indiana and Kentucky. The Pacific Coast Div. of Sun Chemical's **General Printing Ink Co. Div.** has established an expanded flexographic ink service in Los Angeles to meet increasing demands of the packaging and allied industries on the West Coast. GPI also is improving all its manufacturing facilities in the area.

General Box Co., Des Plaines, Ill., has purchased **Craft Corp.** of Roseville, Mich., manufacturer of corrugated containers. The newly acquired operation, to be known as **General Box Co., Detroit Corrugated Div.**, is now located at 2197 Beaufait Ave. in Detroit. **Charles O'Brien**, former owner of Craft, is plant manager.

The Flintkote Co., New York, plans to build a multimillion-dollar corrugated-container plant at Magnolia, Miss. **Hankins Container Co.**, a Flintkote div., will operate the plant.

National Geophysical Co. has purchased **Electro Plastics Corp.**, Dallas, Tex. The new acquisition will be operated as a div. of National under the direction of **Joe Baxt**, who will continue as pres. of the plastics firm. Electro Plastics produces transparent packaging, including skin and blister packs, as well as contour and special protective packages.

Plax Corp., Hartford, is constructing a new plant at Sharonville, Conn. The facility is expected to be ready for occupancy later this year.

A new aerosol-filling line with a capacity of more than 750,000 units per month has been put on stream by **Par Industries**, Los Angeles.

Three of Japan's largest kraft-paper companies, **Chuetsu Pulp Industry Co., Ltd.**, **Daishowa Paper Mfg. Co.** and **Tokai Pulp Co.** have signed agreements with **Clupak, Inc.**, New York, to make Clupak extensible paper. This brings to 15 the total number of major domestic and foreign firms licensed to make the stretchable kraft, says Clupak.

Robert A. Clabault has been appointed sales mgr. of the Container & Industrial Products Dept. of **W. R. Grace & Co.'s Dewey & Almy Chemical Div.**, Cambridge, Mass. Mr. Clabault formerly was sales-development mgr. of the dept.

Robert E. Graf and **Jerry C. Demoney** have established a design-consultant firm, **Graf Demoney Associates** located at 510 Piermont Rd., Closter, N. J. Both men were formerly associated with **Smith, Scherr & McDermott**, industrial designer of Akron, O.

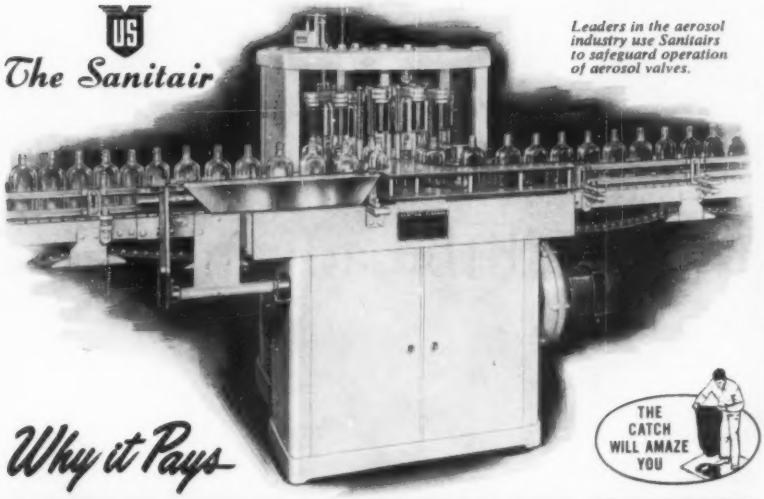
Robert Williamson has been appointed sales director of the custom-fabrication div. of **American Aluminum Co.**, Mountainside, N. J. Mr. Williamson, with the company for two years, has had 25 years' experience in the metal-fabricating field. He was formerly American Aluminum's chief estimator.

Downingtown Paper Box Co., Downingtown, Pa., and **Simplex Paper Box Corp.** of Lancaster, Pa., both subs. of **Downingtown Paper Co.**, have merged with the parent company. Retaining the

[*Continued on page 142*]

US

The Sanitair



Leaders in the aerosol industry use Sanitairs to safeguard operation of aerosol valves.

Why it Pays

TO REMOVE FOREIGN MATTER FROM NEW CONTAINERS

Packaging engineers demand it as indispensable to quality control. Merchandising managers demand clean containers for profitable consumer relations!

Air-Cleaning costs so little . . . the lack of it can cost so much. Once a Sanitair is synchronized into the production line, its operation is entirely automatic. Containers are completely inverted, *before*, *during* and *after* the air tubes enter, assuring positive cleaning. Has automatic operating safeguards. Speed is adjustable to line operation. Container changeover for all sizes including wide-mouth finishes. Exclusive, patented features. For complete details, write for the "Sanitair Bulletin."

U. S. BOTTLERS MACHINERY COMPANY

PACKAGING ENGINEERS

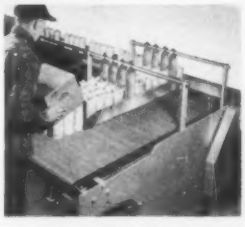
4017 NORTH ROCKWELL STREET, CHICAGO 18, ILLINOIS

BOSTON - NEW YORK - PHILADELPHIA - LOS ANGELES - SAN FRANCISCO - SEATTLE - DENVER - PORTLAND, ORE. - KANSAS CITY
TUSCON - JACKSON, MISS. - ATLANTA - MONTREAL - TORONTO - VANCOUVER - WINNIPEG - SANTIAGO - SAO PAULO - HONOLULU

The E-Z Air Cleaner

for semi-automatic air cleaning of new containers of any size or type. Containers are manually inverted over air valves, two at a time, up to 40 per minute. Write for the "E-Z Bulletin."

For rinsing bottles or jars, ounces to gallons as illustrated. Rinses both inside and outside with water or steam. Write for the "Rotary Rinser Bulletin."



To Feed Containers Faster

THE U. S. CONTAINER FEEDER feeds containers to the packaging line faster, easier, at a steadier pace and a lot cheaper! Just dump 'em on, and let the feeder take charge. Pays for itself quickly and reduces costs permanently. Write for a "Container Feeder Bulletin."

PRODUCT APPEAL

Oliver Labels are "stoppers"! Colorful, attention-getting design . . . clear, snappy printing. Oliver Labels will help your product to command the attention it deserves.

OLIVER

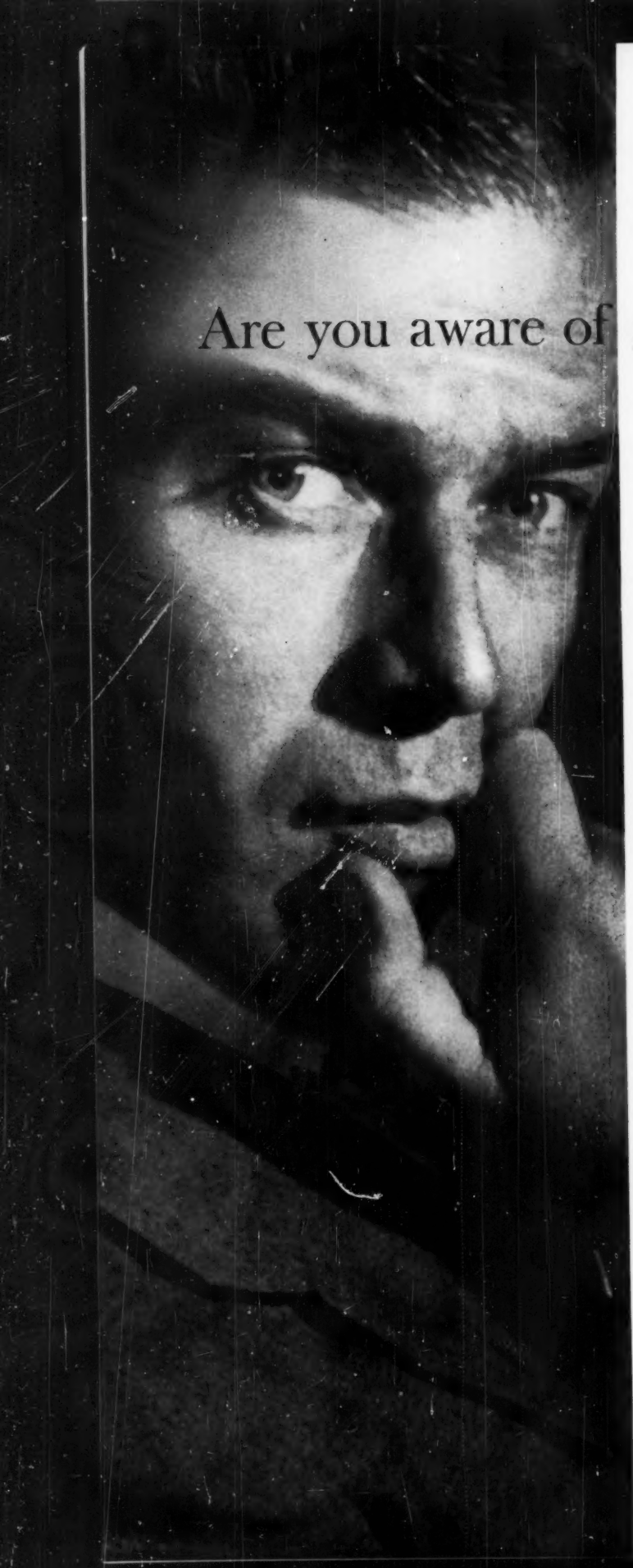
Roll-type Heat-seal Labels are printed and used in continuous roll form and are applied by mechanical heat-sealing methods. They are easy to store—economical to use. Applied by automatic labelers, they are cleaner — the right adhesive for your film.

Oliver offers you "one-stop" label service, complete from designing to printing. Service is fast, dependable. May we serve you?

OLIVER
MACHINERY COMPANY

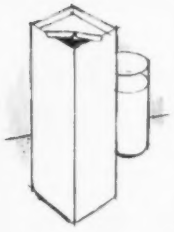
LABEL DIVISION

445 6th, N.W., Grand Rapids 4, Michigan

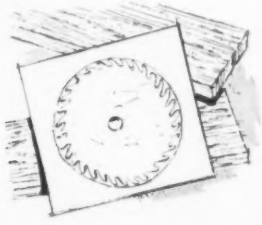


Are you aware of all the advantages of

In planning an efficient package for your product, you no doubt considered the obvious advantages offered by polyethylene as a coating resin: the resistance to chemicals and solvents that coatings of polyethylene can give to your package . . . the puncture resistance, low permeability to liquids and water vapor . . . the flexibility over a wide range of temperatures . . . and the extra consumer appeals of visibility or convenience that polyethylene coatings often make possible.



But have you considered the many other ways these versatile resins can help you package your product more conveniently and economically? Example: milk cartons coated with polyethylene resins are not only leak-proof, but avoid objectionable flake-off. Example: because of a new process that makes certain



polyethylene coatings for your packages?

polyethylene coatings gluable, packages of coated boxboard may now be filled and sealed at the high speed necessary for economical operation. Example: convenient, sales-winning heat-and-serve food packages use coatings of polyethylene to provide heat seals that withstand freezing and boiling temperatures. Example: linings of polyethylene on multiwall shipping sacks resists microbic attack, offer a quick-release, non-stick surface that reduces wastage. Example: in flexible packaging applications a polyethylene coating on foil cushions the foil against fracture.

Naturally, not all formulations of polyethylene are equally suitable for all jobs. That's why Du Pont offers 12 formulations of ALATHON polyethylene resins for packaging applications, each tailored to meet a specific need. The next time you have a packaging problem that might be solved by the use of a polyethylene coating, consult with your supplier of packaging materials about the selection of the right formulation of ALATHON.

To help you evaluate the contributions that ALATHON *can make in your packaging operation, Du Pont has prepared a new booklet that discusses a wide variety of recent advances in packaging techniques, and offers helpful information about the many compositions of* ALATHON *now available. For your copy of* "ALATHON . . . *new dimensions in packaging*", *write to:* E. I. du Pont de Nemours & Co. (Inc.), Dept. Y-8, Room 2507A Nemours Bldg., Wilmington 98, Del.

ALATHON®

Du Pont's trademark for its family of dependable, uniform polyethylene resins.

POLYCHEMICALS DEPARTMENT

DU PONT

REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

Plants & People

[*Continued from page 138*]

Downingtown Paper Co. name, the organization will now be divided into the paperboard div., located in Downingtown, and the packaging div., with plants in Lancaster and Downingtown. According to the company, a "totally integrated organization" will allow for better service and improved internal communications and operations.

John Dusenbery Co. is now located at 395 Allwood Rd., Cliffon, N. J. The company makes converting equipment.

Products now made for the printing and box trade by the **Middlesex Products Corp.** of Cambridge, Mass., will be produced in Holyoke, Mass., following the Cambridge firm's recent acquisition by **Hampden Glazed Paper & Card Co.** of Holyoke. **J. A. Leyden** is pres. of the new subsidiary.

Columbia Corrugated Container Corp., Hicksville, N. Y., expects to be in full production at its Syosset, N. Y., plant within a year. The facility, now under construction, will double the company's present production capacity.

The Eastern branch office and showroom of **Arthur Colton Co.**, Detroit, has transferred to expanded quarters at 566 Grand Ave. in Englewood, N. J.

Hoerner Boxes, Inc., Keokuk, Iowa, plans to build a corrugated-box plant at Gurnee, Ill. The $3,000,000 facility will be in production early next year.

The new plant of **Applied Research & Development Corp.**, Chippewa Falls, Wis., is now in commercial production of expandable polystyrene film. The material, called Arlite, is suggested for various packaging applications.

Swift & Sons, formerly of Pasadena, Calif., is now located at 349 Lincoln St., Hingham, Mass., under the new name of **Swift Syringe Corp.** The company makes plastic disposable syringes in capacities of six to 30 cc.

The **William A. Crook Co.**, Watertown, Mass., has purchased additional premises to accommodate expansion of its contract-packaging, vacuum-forming and transparent-packaging divisions.

Samuel Ayres Associates, Inc., is the new name of the former Samuel Ayres, Jr., Associates. The firm of industrial designers is located at 23 Miner St. in Boston.

H. Muehlstein & Co. has moved into larger quarters at 221 N. LaSalle St., Chicago. The company's plastics-processing plant remains at 4237 W. 42 Place, Chicago.

Hygrodynamics, Inc., with offices, engineering and manufacturing facilities at Silver Spring, Md., has been organized as a sub. of **American Instrument Co.**, also of Silver Spring. The firm was created to develop, manufacture and sell high-precision instruments, including items with application to packaging, formerly produced by the Hygrometer Dept. of the parent company.

Construction of a paper-and-pulp mill in Arizona for the manufacture of kraft linerboard got under way last July. Located near Snowflake, the new **Southwest Forest Industries** facility is expected to produce 65,000 tons of kraft linerboard and paper annually.

Sinclair-Koppers Chemical Co. has commissioned a new styrene monomer plant to be located in Houston, Tex. The entire 70-million-pound-per-annum capacity of the new facility will be sold to the **Koppers Co.** The new company will purchase its basic raw material from Sinclair's Houston plant. Completion of the plant is scheduled for mid-1961.

American Can Co., New York, is planning to expand facilities at its Canco Div. Research Center in Barrington, Ill. A 10,000 sq.-ft. addition to the laboratory will be constructed.

Ceragraphic, Inc., Hackensack, N. J., has established an in-plant printing consultant service which will include department layout, selection of equipment for screen making, paint mixing and printing on glass, plastics and metals. Instruction and training of personnel for the operation and maintenance of equipment also will be offered.

An expansion of manufacturing facilities is under way at the New Hyde Park, N. Y., plant of **Cellu-Craft Products Corp.** A new laminating div. also is planned for this year.

Glenshaw Glass Co., Glenshaw, Pa., is erecting a new glass-container-manufacturing plant at Orangeburg, N. Y. It will be ready for operation in the spring of 1961.

Promotions

Paul L. Frederick: to asst. mgr., converter sales, packaging sales div., Film Dept., **E. I. du Pont de Nemours & Co.**, Wilmington, Del. He is succeeded as mgr. of packaging sales for the Dept.'s Southern district by **John A. Pie.**

Charles H. Day: to gen. mgr., Northeastern district, Eastern Metal Div., **Continental Can Co.**, New York.

Alan Stone: to asst. v.p., **Stone Container Corp.**, Chicago. He will continue as director of mktg. services. **Hervey E. Parker, III,** also becomes an asst. v.p. He continues as gen. mgr. of the company's Mansfield (O.) Corrugated Box Division.

G. Gwyn Tucker: to national accounts sales mgr., Container Div., **Rheem Mfg. Co.**, New York. He succeeds the late **F. J. Blume. Ben F. Cake:** to mgr. of operations, Container Div.

James Moller: to Southeastern mgr., **Package Products Co.**, Charlotte, N. C.

Thomas J. Paul: to v.p. and exec. director of sales, **Mel Richman, Inc.**, Bala-Cynwyd, Pa., and New York. **Rudy**

This year—1960—marks the Sesquicentennial of the metal can. Since 1810, when Englishman Peter Durand patented the first crude tin canister, the metal can has won recognition as a necessity of life—a symbol of good nutrition, convenience, and economy.

Truly, it can be said that we live in a "metal can civilization." In America alone, over 40 billion cans filled with 2,500 different products will go to market this Sesquicentennial year. More than 135 industries rely on cans for complete product protection, worry-free conveyance and marketing impact.

Intensive research and active co-operation throughout the can industry have insured progress for 150 years. J. L. Clark has been privileged to contribute to this progress with new products and improved manufacturing and graphic techniques. Whatever the future brings in new products and new materials, Clark will continue to co-operate with the can industry in its advancement toward higher standards.

We invite you to write for our illustrated booklet, "Traveling Through Clark" which offers a complete picture of Clark's facilities. We will welcome your inquiries on any specific container requirements you might have.

J. L. CLARK MANUFACTURING CO., Rockford, Ill.; Liberty Division Plant and Sales, Lancaster, Pa.; New York Sales Office, Chrysler Bldg., N. Y. 17

this is fine pipe tobacco...

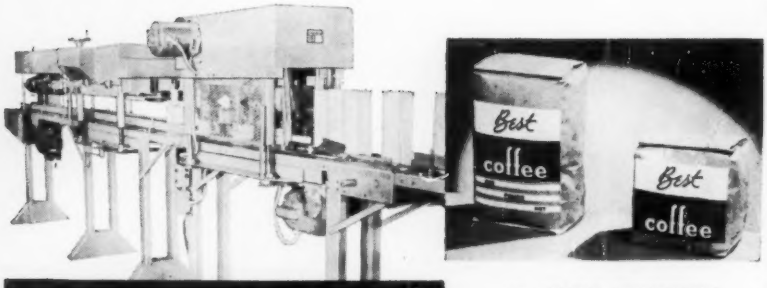
here it becomes the

LONDON DOCK

that men know, see, buy, enjoy, buy again

MARKETED IN LITHOGRAPHED METAL CONTAINERS CUSTOM STYLED AND MANUFACTURED BY

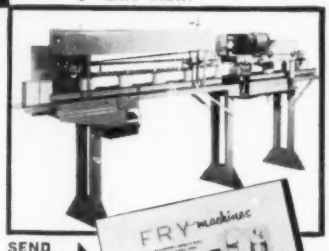
J. L. CLARK



IT'S IN THE BAG!

Fry Model CBG and Tommy Tucker

▲ SIMPLE ADJUSTMENT TO PROPER BAG HEIGHT.
▼ EXIT VIEW.



- **ASSURE YOUR PACKAGE:**
  Shipping and carrying strength...
  Moisture protection...
  Sift-proof closures... Neat appearance.
- **ASSURE YOUR PRODUCT:**
  Safe, compact packaging...
  Long shelf life... Fresh quality.

AUTOMATION SAVES SALARIES

Use Fry Models CBG Bag Sealer Gluer, the Tommy Tucker and v-30 Settler for a continuous, automatic, straight-line operation from filler to shipping carton.

SEND TODAY FOR FREE INFORMATIVE BROCHURE

GEORGE H. FRY COMPANY

42 East Second Street, Mineola, N. Y. — Pioneer 6-6230

on *any* **PACKAGING MACHINE** there is a place where **IMS SILICONE FLUID SPRAY**

WILL CUT YOUR COST

Anywhere Any Packaging Material Tends to Stick . .

IMS SILICONE SPRAY will cut your scrap and stoppage rate—Save You Money! Try it on your packaging line—you'll see why almost overnight this amazing anti-stick material has become a necessity in the modern high-speed packaging field!

PRICES: $ 2.00 Per Sample Can
$ 18.00 Per Unbroken Dozen
$197.40 Per Unbroken Gross

Delivery FREE Anywhere in the U. S. A.

Still lower prices on larger orders shipped in one gross lots on any schedule you request.

INJECTION MOLDERS SUPPLY CO.
3514 Lee Road Cleveland 20, Ohio
WYoming 1-1424

Plants & People [*Cont'd*]

Garcia: to v.p. and exec. director. Mr. Garcia is now responsible for administration of all studio divisions of the design firm.

John Floyd: to technical sales service mgr., a new position in the Multiwall Bag Div., West Virginia Pulp & Paper Co., New York.

Lee A. Belcher: to mgr., newly formed product development dept., Andre Paper Box Co., San Leandro, Calif. **David M. Blue:** to director, art department.

Ralph W. Schlienz: to Midwestern sales development mgr., Specialty Products Div., Riegel Paper, New York.

Donald A. Metzger: to gen. sales mgr., Florida Div., Food Machinery & Chemical Corp., San José, Calif.

Frank J. Brundage: to New England div. mgr., National Starch & Chemical Corp., New York.

Martin S. Hansen: to Midwest service mgr., The Miehle Co., Div. Miehle-Goss-Dexter, Inc., Chicago.

David Wachter: to director of product development, Schnur-Appel, design consultant, Short Hills, N. J. **Bernard S. Bresky:** to director of package design and graphics.

Edward F. Burke: to asst. v.p. of marketing, Standard Packaging Corp., New York.

C. A. Cremens: to Chicago district mgr., Richardson Scale Co., headquartered in Clifton, N. J.

Alexander K. Gage, Jr.: to bakery-machinery export-sales mgr., International Group, American Machine & Foundry Co., New York. He succeeds **A. J. Coll,** now asst. gen. mgr. for food-machinery products.

Appointments

Clifford C. Freund: to sales mgr., custom-products div., Loma Industries, Fort Worth, Tex., custom molding.

Cecil E. Ballard: to district mgr., Asheville, N. C., commercial-container div., Ball Bros. Co., Muncie, Ind.

Stefan P. Boran: from Chrysler Corp. to director of styling research, The Dobeckmun Co., Div. The Dow Chemical Co., Cleveland.

E. Charles Schuetz: from Marathon, Div. American Can Co. to mktg. staff, Elrick & Lavidge, Inc., Chicago marketing information and planning organization. He will coordinate clients' new package-development programs with other areas of marketing investigation.

Obituaries

C. D. Altick, 63, v.p. of The Weston Paper & Mfg. Co., Dayton, O., died June 3.

. . . because they're consistently accurate and dimensionally uniform . . .

Specify HINGE-FOLD© Trademark

Corrugated Cartons

for trouble-free

Automatic Packaging

The widespread trend to automation has created a pressing demand for corrugated cartons of *consistent* accuracy and uniformity to permit uninterrupted machine operations.

Cartons made with the NEW Hinge-Fold . . . an entirely NEW concept of creasing and folding corrugated board . . . set standards of accuracy, uniformity and strength never before achieved.

While eliminating entirely the abrasion and tearing prevalent in corrugated cartons scored by traditional methods, the NEW Hinge-Fold score permits an accuracy and uniformity of fold which results in *consistently better*, stronger cartons . . . to insure trouble-free automatic packaging.

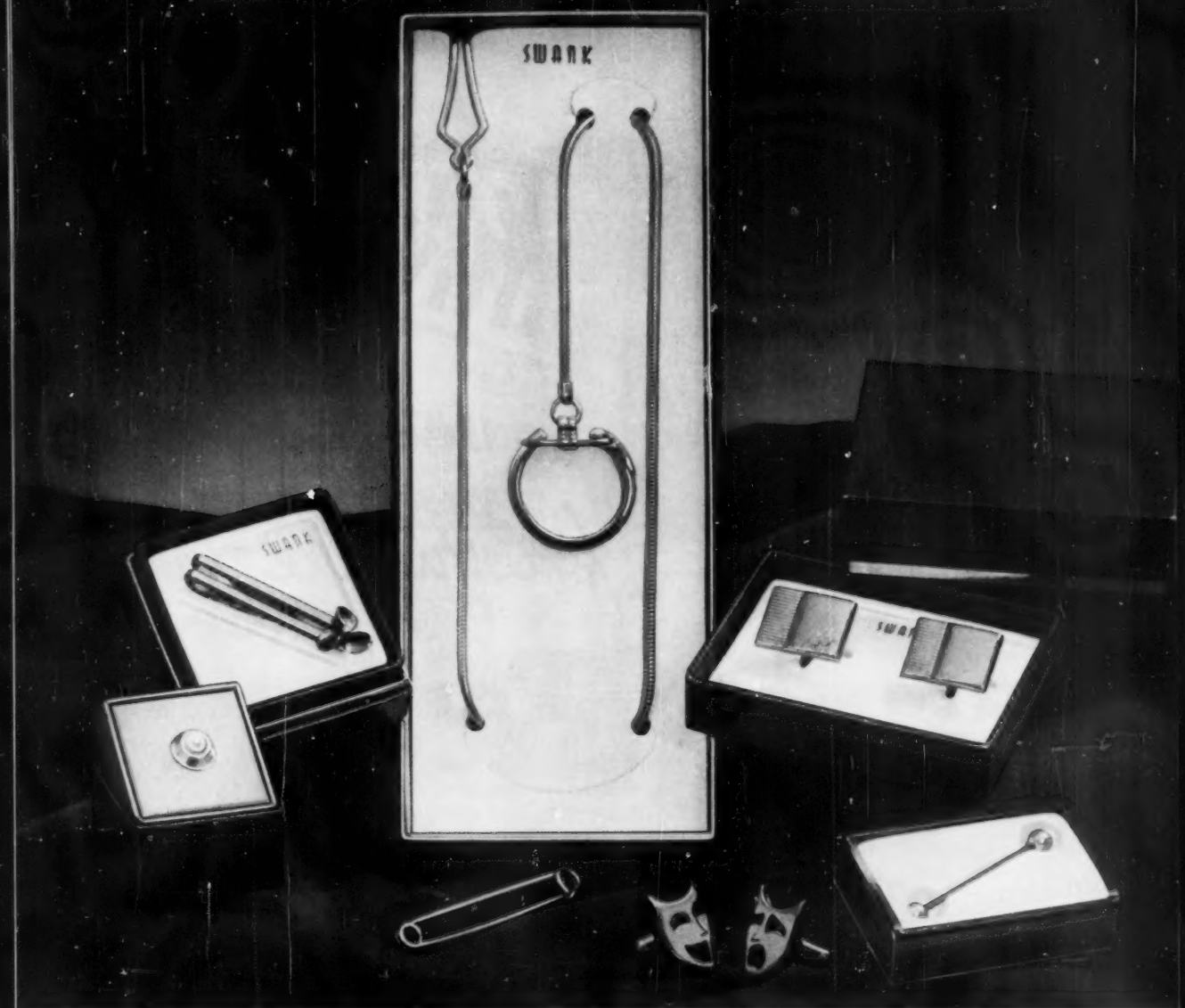
Specify "Hinge-Fold" when you order corrugated cartons.

Write for your free copy of this booklet . . . a report of tests conducted by Container Laboratories, Inc. . . . and see for yourself how these tests prove that "Hinge-Fold" corrugated cartons are "consistently better in all properties measured".

The **international**
PAPER BOX MACHINE COMPANY
315 MAIN STREET, NASHUA, NEW HAMPSHIRE
IPBMCo

MEN'S JEWELRY BY SWANK

SET-UP BOXES BY Dennison



A 24 year partnership that proves.....

"ELEGANCE COSTS LESS THAN IT LOOKS"

SWANK'S LEADERSHIP IN MEN'S JEWELRY has been won by designs and craftsmanship that combine economy and elegance. For example, the handsome gold-plated line shown here has a price range from $1.00 to $2.50. To provide flattering settings for such popular-priced items, Swank turns to Dennison.

MAKING PACKAGES LOOK RICHER THAN THEIR PRICE is a 114-year tradition with America's first manufacturer of set-up boxes. No other source of small set-up boxes can match the richness-per-dollar achieved by Dennison's unique combination of creative craftsmanship and automated production. Design suggestions and cost quotations on your next set-up box requirements will prove beyond doubt that it pays to contact Dennison.

Write: Dennison, Box Division, Marlboro, Massachusetts

Dennison *HELPING YOU COMPETE MORE EFFECTIVELY*

If you want your products to really stand out– put them in

OPAL *...glamour in glass!*

There's a simple, effective way to give your products more glamorous, distinctive packaging—pack them in H-A Opal! In Opal they acquire the gleaming beauty that dominates crowded shelves—and they appeal to consumers by looking elegant all through home-use too. Opal comes in stock or custom shapes, can hold a wide variety of items. Your products will take on exciting new glamour—powerful new sales appeal, when you package them in glistening H-A Opal containers! Plan now to upgrade your products, set them apart from competition—with elegant H-A Opal packaging. For information, just write:

HAZEL-ATLAS GLASS

division of CONTINENTAL CAN COMPANY

Wheeling, West Virginia

Equipment & Materials

[*Continued from page 54*]

ported to be low in cost and to be resistant to moisture, alcohol, grease, oil, acids and alkalies. It also is reported to have good tensile and burst strength, as well as folding endurance. The non-abrasive, non-slip material is printable, taking flexographic and silk-screen inks without surface treatment. According to the supplier, the material, which is suggested for use in food packaging, can be run on automatic machinery (including equipment for making bags, cartons, boxes and spiral-wound containers). The same material, laminated to kraft paper, is offered under the name Paper-Foam. *Dyna-Foam Corp., Ellenville, N.Y.*

Safety-lock plastic vial

Celluplastic Corp. has developed the Clearsite Safety Vial, a clear, rigid polystyrene container that incorporates a built-in locking device. The vial (in 7- and 10-dram capacity) is designed for packaging medications which might be harmful if consumed accidentally by curious youngsters. Construction of the vial and its bright red closure is such that the user must push the closure down and turn it in order to remove it. After first product use, the closure is "locked" on the vial by reversing the turning action. Simple opening and closing instructions are molded in the top of the closure. Because the closure requires press-and-turn action for removal, adults also are protected against taking the wrong medicine, the supplier notes. Surface of the vial is treated for easy acceptance of a label. *Celluplastic Corp., 24 Commerce St., Newark 5.*

Packer for end-open cartons

Weyerhaeuser is marketing a new packaging machine developed by Head-Seal Packaging Corp. The new unit, called

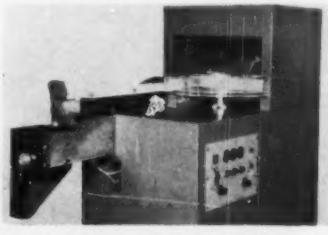
the Head-Seal Captain, is designed for packaging lines using end-opening cartons. It is suggested for use by packagers of frozen pies, dinners and other products normally loaded in end-opening cartons. Said to operate at speeds between 30 and 90 cartons per minute, the machine can handle tuck or lock-style-closure cartons. A variety of carton sizes can be accommodated. *Weyerhaeuser Co., Boxboard and Folding Carton Div., Chicago 11.*

Electronic blister packager

High-speed production and positive sealing are among the features cited by Guild Electronics for its new Dynatherm electronic blister-packaging machine. The unit is suitable for packaging products under a preservative liquid or in the dry state, says the supplier. Permanent identification of the item can be printed or stamped on the cover piece over each blister. Additional data are offered by *Guild Electronics, 388 Broadway, New York 13.*

Single-channel counting machine

Delta Engineering reports the development of a new single-channel universal counting machine, designed primarily for use by packagers in the food, drug and candy industries.



The unit can be combined with various cartoning or heat-sealing machines, making it possible to count, package and imprint in an integrated, automatic operation. For use in the pharmaceutical field, an automatic bottle-positioning conveyor is available as an attachment. The new machine is said to be particularly suited for counting a wide variety of small items for packaging in counts of 10 to 144 per package. Change-over, without change parts, can be accomplished in one minute, says the supplier. *Delta Engineering Corp., Melrose, Mass.*

Price cut for polypropylene

AviSun reports a price reduction of nearly 13% per pound (in 10,000-lb. shipments) for Olefane polypropylene film. The new price—2.25 cents per 1,000 sq. in. in one-mil gauge—reportedly places the film below the cost of cellophane on an area basis and makes it competitive with polyethylene for many applications. Introduced last year for the wrapping of bread and paper products, polypropylene film has been cleared for general food applications by the F&DA. *AviSun Corp., 1608 Walnut St., Philadelphia 3.*

New source of aerosol overcaps

A new national supplier of plastic aerosol overcaps is Sunbeam Plastics Corp. The closures are injection molded from a variety of thermoplastic materials. According to the supplier, the new "Tripl-Lok" overcaps in its line embody the following features: flat stacking tops, three gripper lugs reaching over the crimped can neck, three tapered flats for snug fit and three areas between the flats to provide friction grip that offers additional holding power. Other cited features inclue: external gating for smooth inner surface, safe clearance between nozzle and top of cap, elimination of internal protrusions that could accidentally actuate the valve, and greater strength through uniform wall thickness. *Sunbeam Plastics Corp., Evansville, Ind.*

Polyethylene-bag sealer

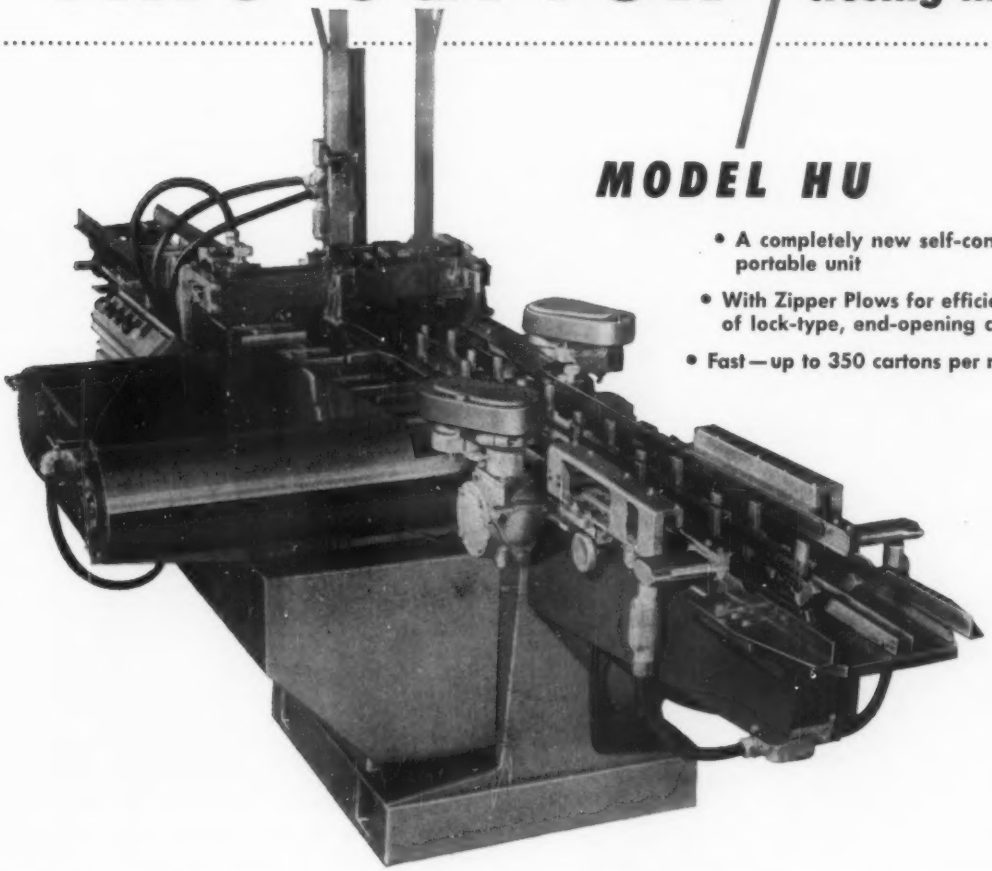
Carbert's Model 1010 polyethylene-bag sealer is specifically engineered for bakery use, reflecting the trend toward thermoplastic-film-packaged baked goods. The new unit forms contour packages up to 4 in. thick and handles bag sizes ranging from 4 to 12 in. long. Operating speeds, says the supplier, are from 600 to 1,000 linear in. per minute. Seals formed by the machine are claimed to be four times as strong and thick as the bag itself. Bags up to 6 mils thick can be accommodated. Available as optional equipment is an attachment for imprinting and applying pressure-sensitive labels. *Carbert Mfg. Co., Cambridge, Mass.*

Shipping-case set-up machine

FMC's Canning Machinery Div. introduces the Sure-Way case set-up machine, said to handle up to 25 shipping containers per minute. Integrated with existing container-casing units, the new machine offers fully automatic package production through discharge of the sealed shipping

NEW fmc carton set up filling & closing machine

MODEL HU



- A completely new self-contained portable unit
- With Zipper Plows for efficient closing of lock-type, end-opening cartons
- Fast—up to 350 cartons per minute

Simply plug it in, fill the carton feed magazine with flat cartons, flip the "start" switches, and your FMC Model HU Carton Handling Machine takes over—giving you one of the smoothest high speed automatic machine operations in your entire plant.

No other carton handler—packaging such products as pies, Frozen dinners, ice cream cakes and pizza pies—gives you all these advantages:

1. **High speed** in continuous, automatic operation – up to 350 cpm, depending on product.
2. **Panel-board controlled** for low cost, one man operation.
3. **Trouble-free operation** and long machine life – this is ruggedly designed and precision constructed equipment.
4. **Portable** for roll-around positioning in various working areas.
5. **Versatile**—engineered for quick and easy adjustment to handle a variety of products requiring carton dimensions ranging from 6⅜" to 14" long by 3" to 10½" wide, flaps open.
6. **Sanitary, easy to clean**—constructed of stainless steel and aluminum, and to NEMA 4 Electrical Code.

You're sure to want complete information on this outstanding FMC unit. Write today, or ask your FMC representative to call.

Putting Ideas to Work

FOOD MACHINERY AND CHEMICAL CORPORATION

Canning Machinery Division

General Sales Offices:

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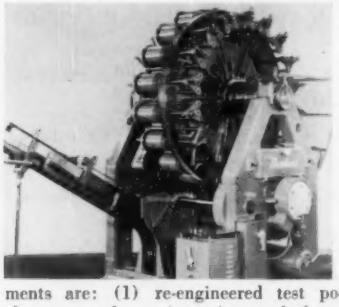
case, says the company. In operation, flat cases are stripped from the botom of the case set-up machine's magazine feed by means of vacuum cups which place the flat carton on a travel track where it is engaged by the cleats of a chain conveyor. Mechanical arrows, in combination with a cam-operated stationary stop, erect and square the shipping case. The set-up case then is indexed in front of the loading tube of a synchronized casing machine, and is advanced over the tube by an air-operated positioning device. After patterned containers are transferred into the case, the filled shipper is discharged for sealing. *Food Machinery & Chemical Corp., Canning Machinery Div., San José 8, Calif.*

Leak tester for large metal cans

A fully automatic 18-pocket machine for leak testing large-size cans has been placed on the market by Borden's. Reported to operate at speeds up to 210 cans per minute, the new unit can accommodate round, square, oblong and other shape cans up to No. 10 size. According to the supplier, the new mechanical-type can tester incorporates four major improvements in leak-testing equipment. These reported improvements are: (1) re-engineered test pockets, for quicker change-over for various sizes and shapes of can; (2) increased test-cycle period for leak detection; (3) a super-sensitive switch that eliminates the problem of atmospheric interference, and (4) a redesigned discharge turret which eliminates mechanical failures and permits positive discharge of defective cans while the machine is operating at high speed. Details on the new machine are available from the supplier company. *The Borden Co., Can Machinery Div., 350 Madison Ave., New York 17.*



Bulk milk package and filler

Scholle Container Corp. offers the dairy industry a disposable "bag-in-box" bulk milk container and an automatic machine for processing the container. The 5-gal. Scholle-Pak, as the package is called, is designed to fit standard milk dispensers. It consists of a waterproofed corrugated carton containing a sturdy sealed polyethylene liner bag with sealed dispensing tube attached. Shipped in knocked-down form, the bulk container is claimed to offer savings through low cost and elimination of the need for storing, cleaning and maintaining metal cans. According to the supplier, the new containers, when empty, occupy 90% less storage space than cans; when filled, they occupy 40% less space. After set-up, the bulk container is filled automatically on the company's Auto-Fill machine, which shuts off when predetermined weight volume is reached. The filler unit operates without drip, splash or foaming, says the firm. Data are available from *Scholle Container Corp., Long Beach, Calif.*

Pressure-sensitive protective paper

Protection of any surface that must be guarded against marring during shipment, handling or other use is the advantage of Tech-Industro's pressure-sensitive paper. Like any other pressure-sensitive material, the paper goes on smoothly, but it strips off without leaving stains or blemishes of any kind, says the supplier. The printable white paper (offered in blank or printed form) is available in two types. They are: KB1, a non-stretchable paper; and KB2, a resilient, stretchable paper with a latex adhesive. The paper is supplied in standard 36-by-48-in. rolls, as well as odd-size rolls. For additional details, contact *Tech-Industro Co., 415 W. Pike St., Philadelphia 40.*

Supplier of linear polyethylene

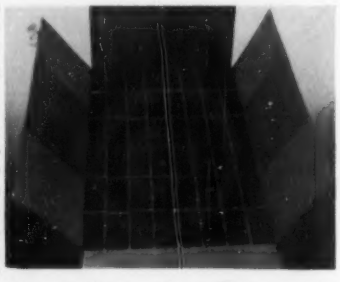
High-density polyethylene has been added to Eastman Chemical's line of plastics. The new material offered by the supplier will have densities of 0.941 and higher. To be marketed under the Tenite trade name, it will give the company a complete range of low-, medium- and high-density polyethylenes. For additional information about the material, contact *Eastman Chemical Products, sub. Eastman Kodak Co., Kingsport, Tenn.*

Automatic price marker for cans, jars

Gottscho reports the development of a high-speed, high-volume machine for price marking the tops of cans, jars and bottles. The automatic, self-powered unit is claimed to operate at up to 1,000 imprints per minute. It will mark surfaces recessed as much as ⅝ in. Accommodating quick-change rubber type, the device can be integrated easily into a conveyor line at any convenient point, says the manufacturer. *Adolph Gottscho, Inc., Hillside, N.J.*

Bottle shipper without cell headspace

Developed by Thatcher Glass for the distiller industry is a new corrugated shipping container which eliminates cell-headspace allowance. In the new carton, called NCH, bottle cells come flush to the top of the shipper, giving it greater stacking strength. The supplier points out that distillers have designed headspace allowance into shipping cases in an attempt to protect the Federal strip stamp required by law on all bottles containing distillers' products. The reason for the former need for headspace, says the company, is that when filled bottles are case packed, the adhesive used in stamp application usually is not completely dry. Thus, there is a danger of stamps sticking to case flaps and becoming damaged when the case is opened. But, the company points out, cell-headspace allowance weakens shipping-carton stacking strength, often resulting in bulging or otherwise deformed cases. It also permits bottles to jog around in the case, causing scuff damage to stamp and label. The supplier reports that it has solved these problems by developing a carton without headspace, but with flaps that are specially coated to resist the strip-stamp adhesive and provide a smooth, non-abrasive surface that protects the stamp against rub damage during shipping and other handling. The coating is applied only to those areas of the flaps that contact bottle tops. Extensive laboratory and field tests show that the new shipper protects stamps, reduces label scuffing and has excellent stackability, says the firm. *Thatcher Glass Mfg. Co., 375 Park Ave., New York 22.*



Strong new fibre drum

Grief Bros. has developed a fibre shipping drum with plastic-laminated fibre cover and bottom. According to the supplier, the strength of the new drum is such that it can easily accommodate shipping weights up to 550 lbs. Called

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Shake it... squeeze it... but you can't poof it!

Sealed, tight, completely, from the time it leaves the filling line till it reaches the user's hands. Developed by Packaging Corporation of America technicians to eliminate use of inner bags or overwraps for cereals, dry powdered foods, soap products, chemicals and many others, this exclusive Calk-Seal* technique provides positive protection against sifting and infestation. And the single structure package multiplies filling line speed, reduces handling costs. Every day more and more packagers of such products are turning to the advantages of Calk-Seal as a superior packaging method. Developing and providing such advanced packaging techniques is but one of countless ways in which Packaging Corporation of America's concept of Planned Packaging, implemented through integrated national facilities, produces better packaging . . . more sales. Whether your requirements are large or small, regional or national, we welcome the opportunity to help you.

*Machine and process patents applied for.

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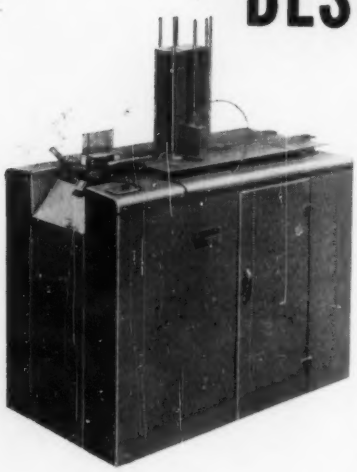

MODEL 50 TUCK-O-MAT

for speeds up to 75 cartons per minute, this semi-automatic time-saver cuts hand-cartoning costs 70%. Still only $2675.

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Equipment & Materials *[Continued]*

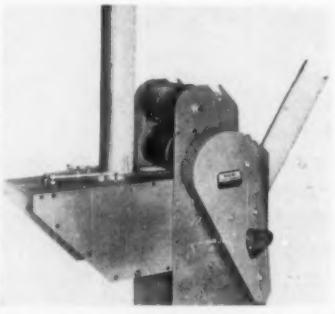
the FF Lok-Rim, the drum also is sai dto offer minimum tare weight and easy opening and closing. The closure's locking lever and metal rim are insulated from the contents of the container. The company also points out that the drum's all-fibre interior insures that no metal will contact the product packed. The drum is available in varied sizes, ranging from 6-gal. to 75-gal. capacity. Interior coating and liners can be supplied to customer order. *Grief Bros. Cooperage Corp., Delaware, O.*

Polyethylene-bottle label adhesives

A group of adhesives for applying labels to polyethylene bottles is offered by Findley. Within this group, called Series 470, are adhesives that handle treated or untreated polyethylene containers on automatic labeling equipment. Characteristics reported for the adhesives include fast setting, moisture resistance and excellent adhesion strength. *The F. G. Findley Co., 3033 W. Pemberton Ave., Milwaukee 45.*

Flexographic lid imprinter

Designed to meet packager demands for on-the spot imprinting is Kamru's Model 300 multicolor flexographic lid-imprinting press. The new unit, reported to be low in initial cost, imprints in two colors. It can accommodate lids up to 6 in. in diameter or 6 in. square. Design of the machine integrates loading, feeding, imprinting and lid stacking. Only one operator is required to operate the press, which is said to offer quick change of plates and color for short-run production economy. Imprinting speed is up to 10,000 lids per hour, says the supplier. *Kamru Products Corp., Elyria, O.*

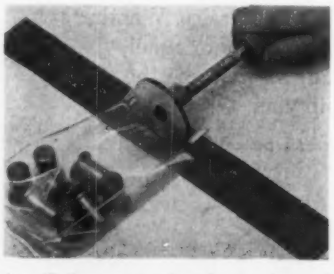


Low-cost polyurethane cushioning

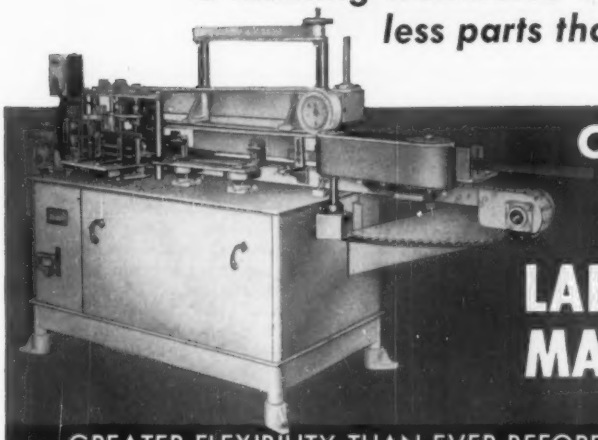
Henry B. Katz Industries has formed a Special Products Div. to handle production and sales of K-foam, a polyurethane cushioning material. According to the supplier, the material meets all Government specifications for cushioning at costs competitive with rubberized hair and fibre. The new division includes a complete converting operation, the manufacturer reports. *Henry B. Katz Industries, East Orange, N.J.*

Economical bag heat sealer

New from Era Engineering is a low-cost, lightweight hand tool for heat sealing filled plastic-film bags. The unit is claimed to provide rapid, strong sealing on all sizes of bag. The sealing element is a handled wheel whose edge is covered with temperature-resistant "Teflon." The covering, says the company, insures continuous smooth seals. Before use, the sealing wheel is heated to a temperature of approximately 350 deg. F. by a heavy-duty heater. The edge of the filled bag then is placed on a rubber back-up plate and the heated wheel is rolled over it, effecting the seal. The sealing device is designed for use in small production runs. *Era Engineering, Inc., 1009 Montana Ave., Santa Monica, Calif.*



a labeling workhorse with less parts than any semi-automatic machine



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Fully Automatic
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variable speed drive from 40 to 150 per minute.

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"postage stamps" to 6" wide by 7" long.

LABEL MATERIALS
foil, paper, plastic, etc.

CHANGEOVER TIME
approximately 15 minutes

CONTAINER RANGE
1½" high by 1" diameter through 14" high by 7" diameter. Practically any shape.

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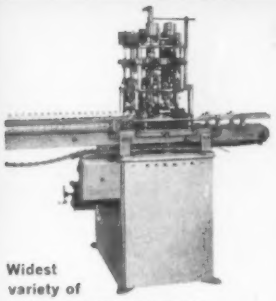

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Fully automatic Overhead drive in vacuum, gravity and volumetric types. Models from 8 to 40 spouts handling all types of foamy and still liquids — for glass, metal or plastic containers from fractional ounce to gallons. Also semi-automatics and custom-engineered models.

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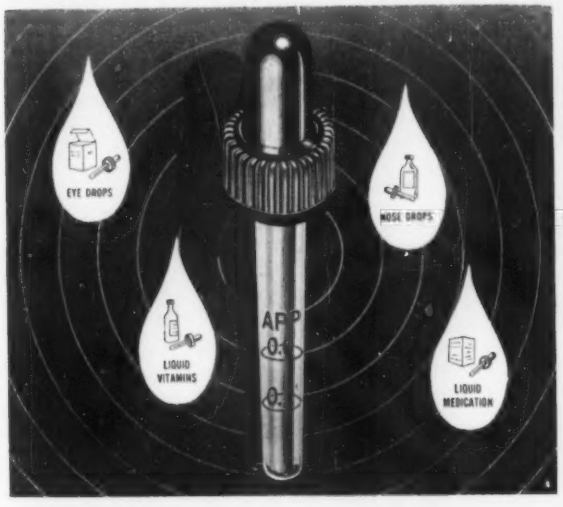

a complete line of plastic and glass droppers and assemblies

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GLASSINE & GREASEPROOF for CONVERTERS

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Protects AROMA • FLAVOR • FRESHNESS

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For Your Information

Fred N. Dundas has been re-elected pres. of **Glass Container Mfrs. Institute.** He is pres. of Dominion Glass Co., one of 61 glass-container-industry supplier companies which are members of GCMI. Other top executives elected by the organization are: first v.p., **C. G. Bensinger,** Owens-Illinois, and second v.p., **J. G. Ferguson,** Laurens Glass Works. Mr. Dundas also was named to the GCMI board of trustees, as were **W. J. Green** (Thatcher Glass), **R. H. Hetzel** (Armstrong Cork) and **G. W. Meyer** (Glenshaw Glass).

Dundas

New contributions have been made to the **Michigan State University School of Packaging Foundation** building fund. The fund (whose goal is $2,000,000) will be used to build a new School of Packaging on the MSU campus at East Lansing. Latest contributions and pledges reported by the university's board of trustees are: **Adhesive Mfrs. Assn. of America,** $1,000; **Aluminum Foil Container Mfrs. Assn.,** $1,000; **General Box Co.,** $500, and **Midwest Converters Assn.,** $200.

MSU reports also that the second annual packaging exposition sponsored by its Packaging Society drew an attendance of nearly 700. Many of those on hand for the two-day affair were industry representatives, according to the Packaging Society.

Newly elected pres. of the **National Fibre Can & Tube Assn.** is **W. F. J. Fienup,** R. C. Can Co. **S. B. Steger** of Dixie Paper Tube becomes v.p. and **Charles W. Coker** of Sonoco Products Co. is treas. **Paul S. Hanway** has been re-elected managing director.

Miami University, Oxford, O., has named its paper-technology center the Robertson Laboratory, in honor of the late **Reuben B. Robertson, Jr.,** former board chairman of Champion Paper & Fibre Co. Mr. Robertson was a member of the university's board of trustees from 1957 until his death last March.

The *Miracle Sales Guide* is a 300-page, looseleaf-style book from Prentice-Hall. Its nine chapters are intended as a guide for creative selling strategy at the all-important sales level. The leatherbound book (8-by-11-in. page size) is divided into sections by reference-tabled paperboard pages. Also included is a 10-page index. Copies are available, at $15.45 each, from Prentice-Hall, Inc., Englewood Cliffs, N.J.

Dollar volume of folding cartons shipped in May of this year showed a 5.3% increase from May 1959, according to the **Folding Paper Box Assn. of America.** In the first five months of 1960, total shipments reported were almost $9 million more than the amount recorded for the same period last year. Some 34 revised data pages for the FPBAA "Mechanical Cartoning Equipment Manual" have been distributed to manual owners by the association. The book, a comprehensive reference for the automatic set up and filling of folding cartons, is available from FPBAA headquarters at 222 W. Adams St., Chicago.

Now available from the **National Paperboard Assn.** is the 1959 edition of its annual statistical yearbook. The 40-page, paper-cover book is designed as a reference manual on the production of paperboard used to manufacture corrugated and solid-fibre shipping containers, folding cartons, set-up boxes and other packaging items. Shown, in chart and graph form, are paperboard-production figures each year from 1930 through 1959, as well as data on mill capacity, raw-material consumption and industry earnings. For information about the manual, contact National Paperboard Assn., 1145 19 St., N.W., Washington 6, D.C.

The recent 1960 regional meeting of the **Packaging Machinery Mfrs. Institute** drew top executives of the machinery-supplying industry from all over the U.S., reports PMMI. The three-day meeting was held at Rockford, Ill., and was hosted by **Bartelt Engineering Co.** During the meeting, PMMI pres. **Kenneth B. Hollidge** pointed out that rising sales volume during the past year has made the period one of the most successful in the history of the packaging-machinery industry.

Roll Label Mfrs. Assn. elected new officers at its annual spring meeting in Chicago. They are: pres., **T. J. Norman, Jr.,** Package Products Co.; exec. director, **John A. Bresnahan;** v.p., **A. M. Steigerwald,** A. M. Steigerwald Co., and treas., **W. Wallace Muir,** Grand Rapids Label Co. LMA's fall-winter meeting will be held Nov. 16-18 at the Desert Inn in Las Vegas, Nev.

R. C. McCurdy of Shell Chemical Co. was elected pres. of **Manufacturing Chemists Assn.** at its recent 88th annual meeting. He succeeds **John T. Connor** of Merck & Co. **Howard S. Bunn** of Union Carbide Corp. becomes new chairman of MCA's exec. committee. Elected to the post of v.p. were **J. Robert Fisher** of Gamma Chemical and **W. G. Malcolm,** American Cyanamid.

A public education program designed to acquaint label buyers with the economic and manufacturing aspects of the label industry has been begun by the **Lithographers & Printers National Assn.** The basic task, says LPNA, will be to bring about an awareness of the increasing costs and inflationary trends which are making it difficult for label suppliers to maintain existing price levels. A three-man committee has been appointed to implement the education program. Its members are: **Walter J. Ash,** Consolidated Lithographing Corp.; **Leo P. Blank,** Stecher-Traung Lithograph Corp., and **Red Fleming, Jr.,** Fleming-Potter Co.

Clifford F. Evers of Ac'cent-International is new pres. of the **Research & Development Associates, Food & Container Institute.** Exec. v.p. is **F. Warren Tauber** of The Visking Co. Other newly elected officers include: board chairman, **Clarence K. Wiesman,** Armour & Co., vice chairman, **Weld Conley,** Chain Belt Co.; activities committee v.p., **Dr. J. M. Jackson,** American Can, and treas., **George E. Brissey,** Swift & Company.

Clarence F. Smith of Inland Container Corp. was a featured speaker at the Sixth Congress of the **European Federation of Mfrs. of Corrugated Board,** which was held in Copenhagen June 14-17. Mr. Smith spoke on the subject: "Development Trends and New Uses for Corrugated Boxes in the U. S."

The **University of California,** Los Angeles, will present its second annual Packaging, Plant Layout and Materials Handling Short Course, Sept. 25-30 at the UCLA Conference Center, Lake Arrowhead, Calif. The course is designed for executives charged with responsibily for initiating industrial packaging, materials handling and plant-

Events

Sept. 11-14—**Produce Packaging Assn.,** annual convention and exposition, Americana Hotel, Miami Beach, Fla.

Sept. 11-16—**American Chemical Society,** national fall meeting, New York.

Sept. 13-15—**New York Section, American Chemical Society,** Chemical Exposition—USA—1960, Statler Hilton, New York.

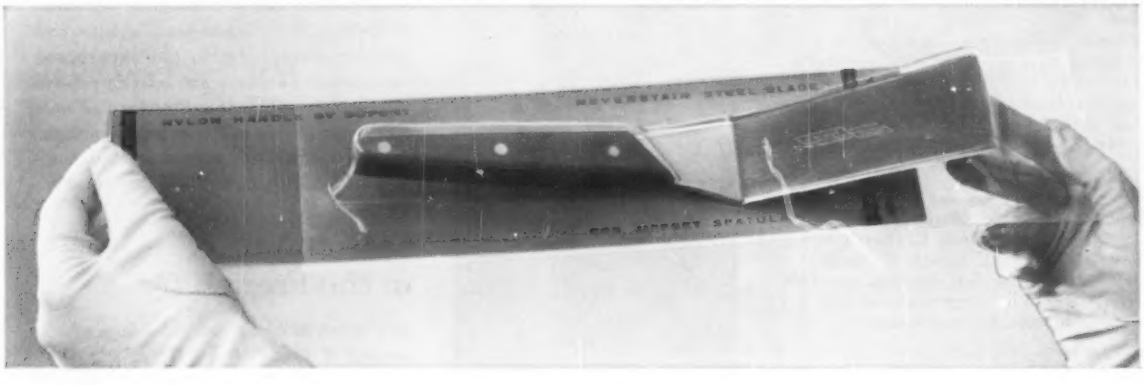
Sept. 18-21—**National Paper Trade Assn.,** fall meeting, Conrad Hilton, Chicago.

Sept. 22-23—**Flexographic Technical Assn.,** meeting, Hotel Roosevelt, New York.

Sept. 25-30—**University of California,** second annual Packaging Plant Layout and Materials Handling Short Course, UCLA Conference Center, Lake Arrowhead, Calif.

Sept. 27-29—**Technical Assn. of the Pulp & Paper Industry,** 11th annual testing conference, Pantlind Hotel, Grand Rapids, Mich.

When design is a sales point– <u>show</u> it with Kodapak



For a market where eye-appeal is important, Ontario Knife Company called on designer Michael Lax to create a versatile new line of Viking knives.

Then Ontario turned to Kodapak Sheet for packages which would both protect the fine steel blades and let the customer see the knives' design.

Why Kodapak Sheet? Because this transparent plastic is crystal-clear, resists abrasion, and is readily formed to produce a package as clean and striking as the knives themselves.

Perhaps you depend on good design to help sell your product. If so, perhaps you too could move it faster if it were packaged in Kodapak Sheet. To investigate, call our representative or write:

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layout programs (military and commercial), as well as for package designers, packaging engineers, suppliers and other personnel. For additional information, contact Engineering Extension, Room 6266G, Engineering Bldg., Unit II, University of California, Los Angeles.

A new piece of technical literature is available without cost from **Union Carbide Plastics Co.** Titled "Extrusion Coating Today," it is a review of current developments in polyethylene extrusion coating. The paper originally was presented before an **American Chemical Society** symposium on coating and printing of non-metallic films by **F. R. Tittman** of Union Carbide's Development Laboratories. For copies of the illustrated 8-page paper (MS No. 2042), contact Union Carbide Plastics Co., 30 East 42 St., New York 17.

New pres. of the **National Institute of Packaging, Handling & Logistic Engineers** is **William R. Black.** Mr. Black is a marketing specialist with the Transportation & Facilities Research Div. of the U. S. Dept. of Agriculture. NIPHLE also has presented 1960 Achievement Awards to **Neil A. Fowler,** formerly with General Box Co. (now retired) and **Robert W. Johnson,** pres. of Cargon Transport, Inc. The awards were given for outstanding contributions to the field of Government-industry packaging, materials handling and logistics.

The fifth national convention of the **Service Merchandisers of America** took place recently at the Ambassador Hotel in Atlantic City. Some 400 distributor and manufacturer members convened for the six-day meeting, July 5-10, which concentrated on plans for improved service by rack merchandisers, with greater variety and higher-quality products.

William A. Chapman of Barry-Wehmiller Machinery Co. has been elected pres. of **Beverage Machinery Mfrs. Assn.** New v.p. is **Frank C. Howell** of Dostal & Lowey Co. **Lowell H. Smith** of Crown Cork & Seal becomes treas. **John Marshall** has been re-appointed to the post of exec. v.p. and secretary.

An ink committee has been formed in the Supplies & Materials Div. of the **Flexographic Technical Assn.** Chairman of the new committee is **Frank Murphy** of Sinclair & Valentine.

Claremont Pigment Dispersion Corp., Roslyn Hts., N. Y., has compiled a booklet on "The Significance of the Food Additives Amendment of 1958 to the Food Packaging Industry." Within its 13 pages are discussed the amendment itself, packaging planning within the law and the impact of the new regulations on printing-plant practice. The report, written by Claremont Pigment's technical director and chief chemist, is available without charge from the company's headquarters at 39 Powerhouse Rd., Roslyn Hts., N. Y.

Standard's marketing approach to packaging pays off... in many unusual ways

How to package a tan at a time

This little tetrahedron-shaped 'Ultra-Pak' contains just enough Vic Tanny sun lotion for one application. It is formed on a machine developed by William Stevens Company and is proving highly popular for many types of products. Customers like its convenience, while manufacturers find it reduces the amount of packaging material needed to enclose their product. Standard Packaging's *Modern Packages Division* furnished the poly/cel film, completely printed and laminated.

New container lures anglers

Crickets make fine bream bait and Selph's Cricket Ranch in Memphis does a brisk business supplying them to hopeful rod 'n' reelers. The crickets are sold, alive and chirping cheerfully, in the paperboard container you see here, attractively printed in two colors and made by Standard's *Fonda Container Division.* Fishermen like them. And the crickets appear contented, too—at least while they're still in the container.

More buy in the French fry

How much *sell* can you put into a single serving of French fries? This little 'food boat', especially designed for Jerry's Drive-In, St. Louis, by Standard, proves you can sell right down to the last mouthful. "Jerry's Drive-In" is spelled out on all four sides of the container, while the bright orange stripes lend a festive touch to every portion. Jerry's reports that customers remember the new trays and that business is booming like—well—hot potatoes!

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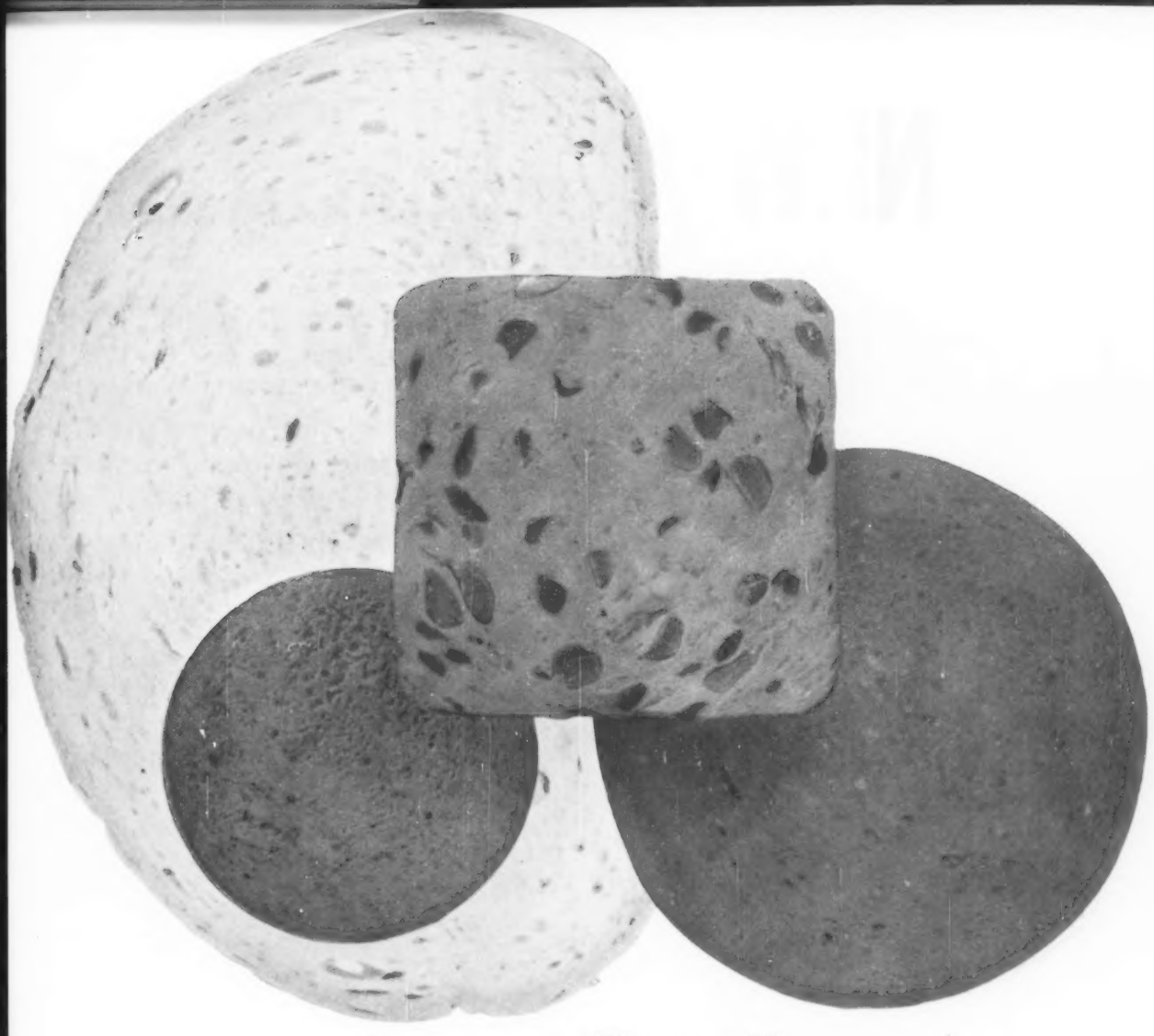
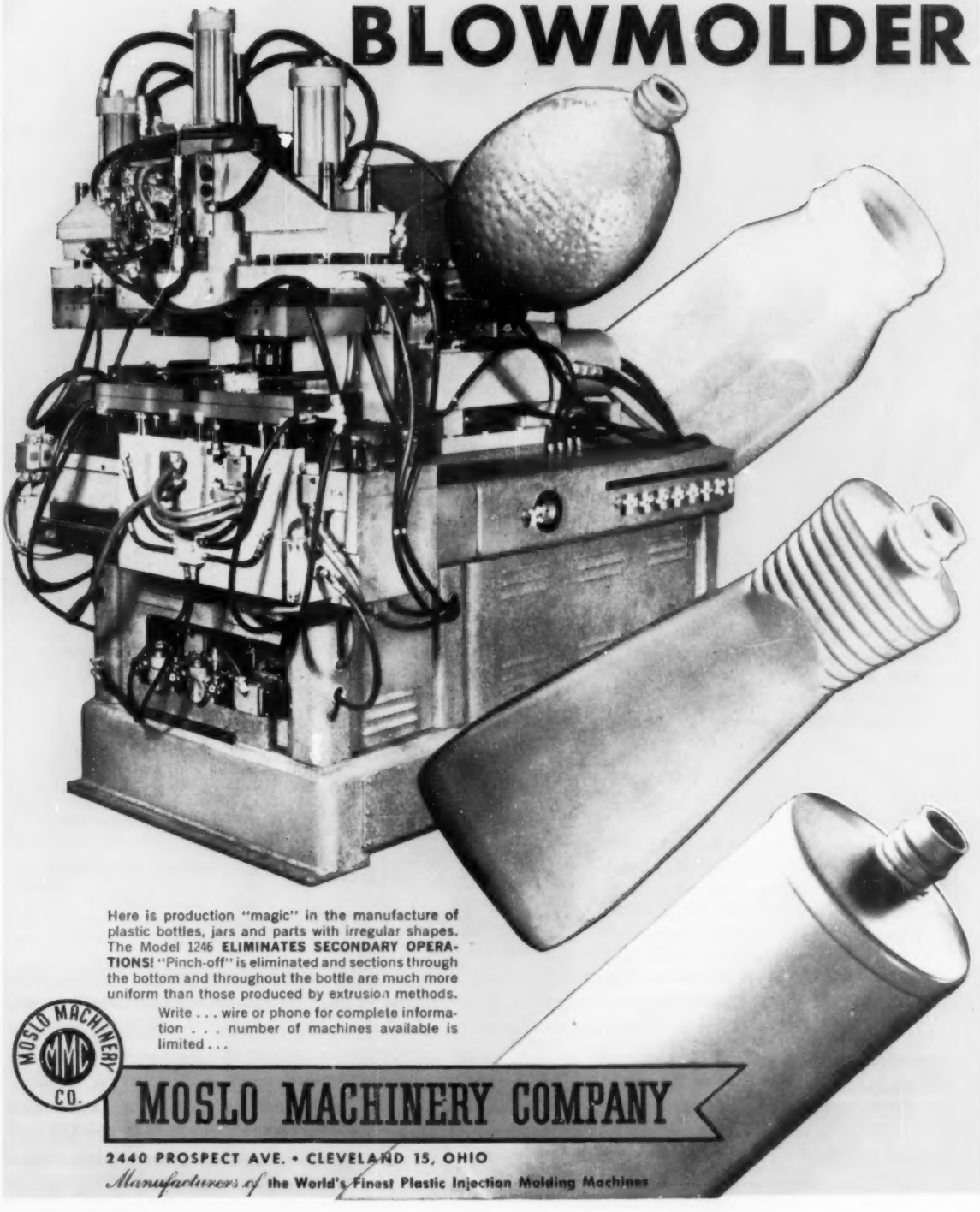


The top 10 meat packers use FLEX-VAC® by Standard Packaging

How does Standard Packaging respond to consumer trends? FLEX-VAC vacuum packaging is a good example. Busy housewives liked the convenience of luncheon meats. But they also favored once-a-week marketing. The problem: How to make luncheon meats keep longer – in stores and in the home. Standard's solution was to develop both the FLEX-VAC vacuum package and the revolutionary "6-12" packaging machine. Now, luncheon meats retain their freshness and flavor up to 10 days longer. And packers' costs are actually *lower* than with packaging methods that provide *less* protection. Has your package kept pace with our changing economy? Investigate Standard Packaging's *marketing* approach. It extends to every phase of packaging.

STANDARD PACKAGING CORPORATION • Executive Offices: 200 East 42nd Street, New York 17, New York

NEW NEW NEW DUPLIMATIC BLOWMOLDER



Here is production "magic" in the manufacture of plastic bottles, jars and parts with irregular shapes. The Model 1246 **ELIMINATES SECONDARY OPERATIONS!** "Pinch-off" is eliminated and sections through the bottom and throughout the bottle are much more uniform than those produced by extrusion methods.

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New Whether Predictor! To buy, or not to buy? ***Gardner Market Research*** finds the answers and the reasons why—to guide the development of your package.

Shape of Things to Come! In ***Gardner Structural Design*** market-oriented ideas achieve form and function. Creativity is shaped by utilitarian and sales factors.

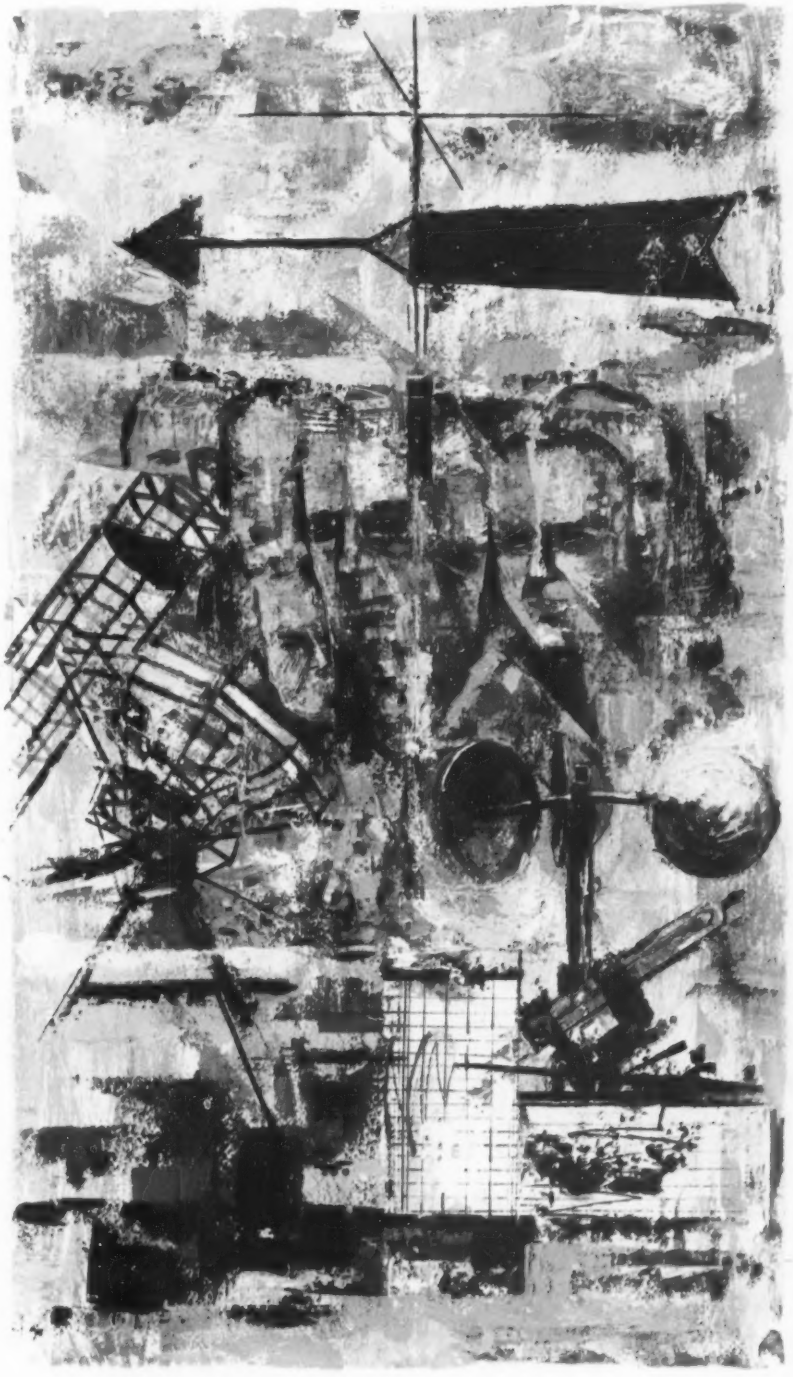
What does an idea look like? Guided by research, ***Gardner Graphic Design*** applies color, type, and imagination to produce a design that changes lookers into buyers.

Nuts and Bolts! ***Gardner Machine Application*** adapts your production machinery to your new packaging program—efficiently and most economically!

Hypothesis meets the housewife! Is it really a good idea? Will it sell? If it passes ***Gardner Package Testing***, you'll see it—if not, back to the drawing board.

NEW WHETHER PREDICTOR!

"To buy, or not to buy?" From market conditions and prevailing consumer buying patterns, Persuasive Packaging forecasts the answer—and the reasons why. Best way to find out why a person does, or doesn't buy your product is to ask him. Ask enough people, and a pattern begins to emerge. That's where Gardner Market Research comes in. People—prospects, customers, dealers, men, women, and children—are questioned. What do they like about your product? your package? your competitor? Anything that reflects on the nature of your sales problem is noted. ¶ Their findings, properly interpreted and evaluated, direct and motivate Persuasive Packaging. The result? We show you only coordinated, sales-oriented packaging recommendations. Resourceful, imaginative packaging that sells! ¶ If you're a "show me" guy, call us. We'll be glad to **show** you how whether prediction can help you blow up a storm of new sales.



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WORKING EXAMPLE OF PERSUASIVE PACKAGING

You're looking at the "stars of the show"—top winners (two 1st and four merit awards) in the 1960 Folding Carton Competition. Pretty, but practical, too. New in shape, design, concept, construction and sales results. Our contribution? Prize-winning construction, plate work and printing to flatter an already superb design*—plus a firm recommendation that we employ the exceptional printing characteristics of our new premium board—Diamond-Glo. ¶ Throughout the development of the program, Gardner packaging experts worked closely with the designers offering technical counsel in the areas of structural design, printing, and machine development. We'd be happy to offer you the same sort of service. ¶ *package designs by Smith, Scherr and McDermott.

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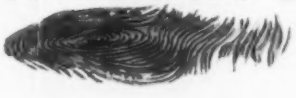
MIDDLETOWN, OHIO

THERE IS NO MARK LIKE YOUR OWN



If we, as builders of marking equipment, could devise an identification marking method that even came close to the simplicity, universality and distinctiveness of fingerprints—we'd have solved a fair share of our customer's problems in a single stroke.

But the wide variety of products and packages industry has to mark calls for an almost unbelievable number of different printing methods, feeds and ejections, type elements and specialty inks. What will automatically color band diodes or resistors at high speed is nothing like the right combination for imprinting bakery labels . . . or stamping shoe linings . . . or marking vitamin capsules . . . or decorating children's cowboy boots. If they're going to do a good job for the user, they must each be precisely the right combination of machine, type, ink and method.

When you use such a marking method, labor is at a minimum — inventory is simplified — identification of your product and your company is positive and lasting. Since there is no mark quite like your *own*, are you using yours to best advantage? Markem Machine Co., Keene 1, New Hampshire.

EVERYTHING INDUSTRY NEEDS . . . FOR PROFITABLE MARKING . . . SINCE 1911

MARKEM

U. S. Patents Digest

This digest includes each month the more important patents of interest to packagers. Copies of patents are available from the U. S. Patent Office, Washington, D. C., at 25 cents each in currency, money order or certified check. Postage stamps are not accepted. Edited by H. A. Levey.

Container Side Seam, James H. Groves (to American Can Co., New York, a corporation of New Jersey). U.S. 2,934,236, April 26. A solderless hermetic-side seam for a can body, comprising interlocked inner and outer reversely bent body hooks extending longitudinally of said can body, the can body wall extending from said inner hook being bent outwardly to lie close to the bend of said outer hook.

Guide Structure for Bottle-Stoppering Apparatus, Jack C. Henderson and Guilio L. Parodi (to The Upjohn Co., Kalamazoo, a corporation of Michigan). U.S. 2,934,238, April 26. A device for receiving successively supplied stoppers and holding them in position to permit a ram to drive same into a bottle.

Tray Insert for Packages. John A. Wickstrom (to Mother's Cake & Cookie Co., Oakland, a corporation of California). U.S. 2,934,252, April 26. A tray insert for packages formed from an integral cut and scored foldable blank and comprising a longitudinal backbone of double thickness, formed by folding a central panel about the longitudinal axis of said foldable blank.

Bacon Package, Kenneth T. Buttery and Thomas Vander Lugt, Jr. (to Sutherland Paper Co., Kalamazoo, Mich.). U.S. 2,934,253, April 26. A carton having a general parallelogram integrally of paperboard cut and scored to provide a bottom, a front wall at one side edge of the bottom and an inner rear wall panel at its other side edge.

Bag Closure and Method of Opening Bags, Orville W. McDuffie (to International Paper Co., New York, a corporation of New York). U.S. 2,934,255, April 26. A closure for the open end of a multiwall paper bag, comprising a line of stitching securing the opposing walls of the open end of the bag.

Tab-Equipped Can, John Henchert (to Continental Can Co., New York, a corporation of New York). U.S. 2,934,843, May 3. A can side wall formed of a metal blank having an overlapped end and an underlapped end connected by a side seam, said side seam having an underlapped portion and an overlapped portion between its ends and interhooked portions above and below said underlapped portion and said overlapped portion and secured together.

Packaging Fluent Materials, Clarence W. Vogt, Weston, Conn. U.S. 2,934,867, May 3. A method of making and filling packages, comprising heating a sheet of thermoplastic material to soften it, subjecting opposite sides of said sheet to different pressures to form at least two adjacent cavities in said sheet, applying reinforcing elements to the sheet adjacent at least one side of each cavity and filling said cavities wtih fluent material.

Apparatus for Applying Tear Card to Inner Flap of Wrapped Package, Karl Klause and Frederick A. Grupe, Sr. (to American Can Co., New York, a corporation of New Jersey). U.S. 2,934,870, May 3. Apparatus for applying a tear card to an inner flap of a wrapped package during the wrapping thereof by a wrapping machine.

Dispensing Package, Ralph H. Thomas (to Bristol-Myers Co., New York, a corporation of Delaware). U.S. 2,935,188, May 3. A tablet dispenser comprising a substantially rectangular container having spaced-apart double walls and an open end, a supply of tablets within said dispenser, with a continuous flange comprising a flat sealing surface interconnecting said walls.

Dispensing Package, Gabryel de Million-Czarnecki (to Container Corp. of America, Chicago, a corporation of Delaware). U.S. 2,935,192, May 3. A carton for containing and rotatably supporting a roll of sheet material wound on a hollow core, said carton being formed from a single blank of paperboard material cut and scored to provide a plurality of side walls and multi-ply end walls.

Capsule-Feeding Mechanism for Packaging Machines, George A. Swartz (to Ivers-Lee Co., Newark, N.J., a corporation of Delaware). U.S. 2,935,227, May 3. Apparatus for feeding elongated articles from a mass thereof wherein the articles are disposed in haphazard relation to each other, to a horizontal portion of a packaging machine.

Bag, Charles V. Brady (to Bemis Bro. Bag Co., St. Louis, a corporation of Missouri). U.S. 2,935,241, May 3. A bag having front and back walls joined at both the bottom and top by integral folds, said walls being of generally triangular form having side edges which converge toward the top of the bag, and said front and back walls being secured together at both sides by seams extending continuously from the bottom to the narrow top of the bag.

Method for Blow Molding Plastic Bottles, Robert B. Mason (to Plax Corp., Bloomfield, Conn., a corporation of Delaware). U.S. 2,935,764, May 10. The method of forming a hollow article of plastic material (employing a blow mold having relatively narrow and wide molding portions) which comprises extruding and suspending a tubular length of softened plastic material.

Continuous Vacuum-Packaging Machine, Reid A. Mahuffy, John G. Rote, Jr. and George S. DiMonico (to Standard Packaging Corp., New York, a corporation of Virginia). U.S. 2,935,828, May 10. A continuous flexible vacuum-packaging machine, including an endless rotary series of vacuum-forming pocket molds having peripheral edge-flange portions and means for continuously feeding to said molds a thermoplastic flexible web wide enough to overlie said flange portions.

Apparatus for Erecting and Closing Cartons, Harold J. Goss (to The International Paper Box Machine Co., Nashua, N.H., a corporation of New Hampshire). U.S. 2,935,918, May 10. A machine for continuously erecting and closing cartons of the type having an automatic bottom, end wall closure flaps, a side wall cover and a cover tuck flap, said machine comprising a first, timed, continuously moving endless conveyor apparatus.

Method and Machine for Making a Container, John G. O'Neil (to Rap-in-Wax Co., Minneapolis, a corporation of Minnesota). U.S. 2,935,919, May 10. A machine for making containers, comprising in combination a frame including longitudinally spaced vertical supporting members and longitudinally extending horizontal members which are mounted thereon.

Can-Making Machine, Frank C. Moeller (to Adolph Gottscho, Inc., Hillside, N.J., a corporation of New York). U.S. 2,935,933, May 10. A machine for stamp marking cans which comprises a vertical stationary shaft, a hollow axle mounted for rotation about said shaft and a horizontally disposed disk-shaped can support secured to said axle for rotation therewith.

Can Carrier, Robert M. Dunning (to Waldorf Paper Products Co., Ramsey County, Minn., a corporation of Minnesota). U.S. 2,936,069, May 10. A can package in combination with a row of cans arranged in tangential contact and including a sleeve having four walls foldably connected, two of the walls extending along opposite sides of the cans and the other two walls overlying the ends of the cans.

Container-Inspection Mechanism, Frederick E. Fauth (to Crown Cork & Seal Co., Baltimore, a corporation of New York). U.S. 2,936,071, May 10. In combination, a framework, a conveyor movable on said framework, a shaft housing, a horizontal shaft and a vertical shaft, each rotatably journaled in said housing.

Collapsible Carton, William H. Inman (to Bloomer Bros. Co., Newark, N.Y., a corporation of New York). U.S. 2,936,103, May 10. A collapsible carton having a self-erecting bottom, comprising a blank cut, scored and folded to form foldably connected front, intermediate, rear and closure walls, with a detachable connection between said closure

new treatment gives super high gloss to packages coated with A-C Polyethylene

A new heat treatment using A-C® Polyethylene developed by Semet-Solvay imparts *super* high gloss to waxed paperboard . . . lets you dispense with overwrapping in many cases. It's ideal for frozen food and ice cream packages . . . butter and oleo . . . bread wrappers.

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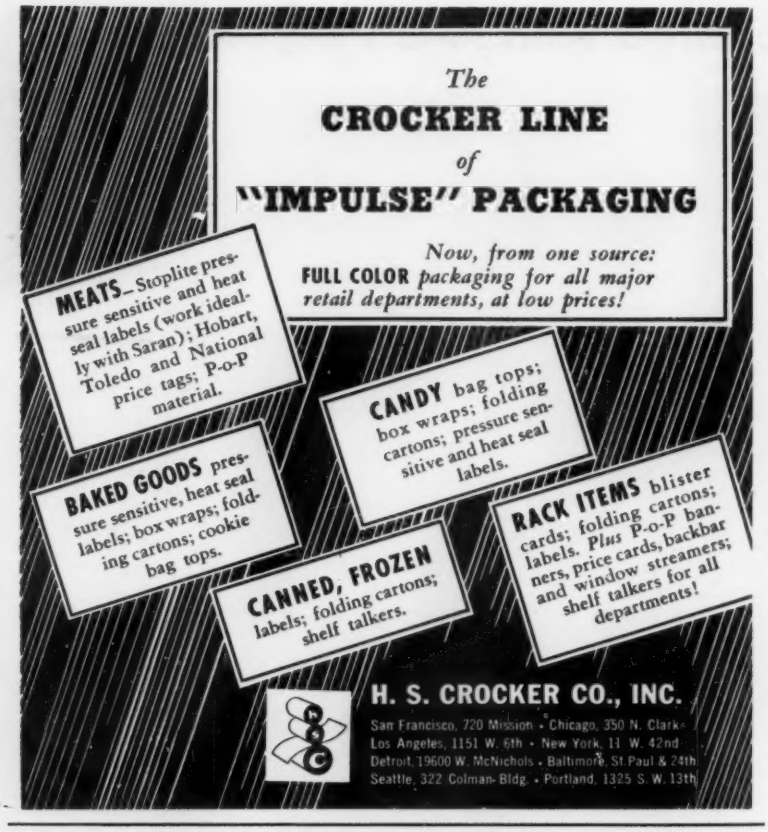
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A large, nationally-known manufacturer of packaging materials is establishing a marketing function which requires the services of a thoroughly trained and experienced director of marketing and market research. The man we seek must have very extensive experience in packaging materials and must have been in charge of a marketing operation in this field. Compensation will not bar us from getting the man we want. Our own organization knows of this opening. All replies will be treated confidentially.

BOX 1286. MODERN PACKAGING

Patents [*Continued*]

wall and said front wall for securing said closure wall in closed position.

Can and Handle-Connecting Means, Rudolph E. Hegji (to Continental Can Co., New York, a corporation of New York). U.S. 2,936,478, May 17. An arched can handle formed from sheet metal and having thin flat attaching feet at its ends, each of said thin flat feet having a perforation whose periphery is downwardly deformed to provide an integral lip on the underside of said foot about said perforation and a countersunk portion on the perforation.

Method for Making Composite Plastic Containers, Orville B. Sherman (to Owens-Illinois Glass Co., Toledo, a corporation of Ohio). U.S. 2,936,489, May 17. In a method of making a plastic article, the steps of extruding a first portion of a material from a first orifice, and shaping the first portion into a finished portion of the article while maintaining said portion in communication with said first orifice.

Container-Top Printing Mechanism, John Columbus, Herman Pesch and Isaac L. Eilcox (to Sealright-Oswego Falls Corp., Fulton, N.Y., a corporation of New York). U.S. 2,936,702, May 17. Apparatus for printing on top closures of containers as the same are successively presented at a printing station by an intermittently advancing container-conveying mechanism.

Bag-Making and Dispensing Machine, Gilmore T. Schjeldahl and Walter Von Stoesser (to G. T. Schjeldahl Co., Northfield, Minn., a corporation of Minnesota). U.S. 2,936,815, May 17. A machine for making bags from tubular thermoplastic material, comprising a horizontal frame and means for supporting a supply roll of the material positioned at one end of said frame.

Container Display Kit, Samuel M. Downs (to Owens-Illinois Glass Co., Toledo, a corporation of Ohio). U.S. 2,936,879, May 17. A kit for displaying empty, transparent, hollow containers being offered for sale and creating the illusion that such containers are filled with the product intended ultimately to be packaged therein by the purchaser.

Carton, Charles Lewis (to Celanese Corp. of America, New York, a corporation of Delaware). U.S. 2,936,941, May 17. The combination, for forming a carton for packaging materials, of top and bottom members each having a wall element, a closed end and an open end, the open ends of said members corresponding to each other in periphery.

Bag-Filling Machine, Edwin M. Lau (to Black Products Co., Chicago, a corporation of Illinois). U.S. 2,936,994, May 17. A bag-filling machine comprising a conditioning chamber for the reception of material to be packed and having an outlet at the lower portion thereof, a spout for supporting a bag to be filled, and a flexible conduit communicating with said conditioning chamber and said spout.

Method of Producing a Package, Jack Palmer (to The FR Corp., New York, a corporation of New York). U.S. 2,937,481, May 24. An improved packaging method comprising introducing a material to be packaged into a recep-

KIRSCH
Kirsch BRACKETS
PROBLEM: Machine package curtain rod hardware in a protective pouch complete with printed trade-mark identity and installation instructions.
SOLUTION: Thilco clear polethylene coated M. F. Kraft permits high speed machine sealing — provides protection from dirt, corrosion and loss of parts.

THILCO

POLY-KRAFT

HEAT SEALABLE

POUCH PAPERS

offer "field-tested" proof of packaging superiority for protection and automatic machine forming

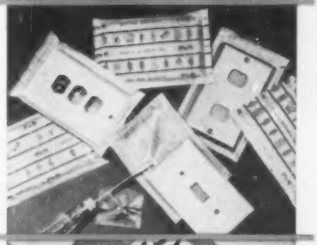
THILCO'S diversified range of Poly-Coated paper combinations solve these packaging problems

PROBLEM: Package dry soup mix in sales appealing print labeled pouch with positive protection from moisture absorption.

SOLUTION: Thilco white M. G. Kraft is foil laminated one side and clear polyethylene coated on other side for required moisture barrier. Eye catching 4-color label decoration is Thilco flexo-printed on gleaming foil side.

PROBLEM: Protect plastic switch plates from dirt and moisture — identify product, and permit consumer selection without opening package.

SOLUTION: Thilco trade-mark decorated M. G. Kraft with scuff-proof, varnished overlay on one side and clear polyethylene coating on other provides protection and medium for heat sealing to "see-thru" cellophane that forms pouch.



PROBLEM: Provide a moisture barrier pouch packet to prevent "caking" of hygroscopic dye granules.

SOLUTION: Thilco polyethylene one side coated M. F. Kraft furnishes the ideal moisture barrier combination. Thilco flexo-printing provides the all-important trademark identification.

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Patents *(Continued)*

tacle of thermoplastic material, provided with a neck portion having an opening surrounded by a peripheral border of upwardly directed, convex, transverse cross section, and applying a sealing diaphragm over said opening and in contact with said border.

Apparatus for Fastening Cartons, Edward Ackley (to Julian B. Slevin Co., East Lansdowne, Pa., a corporation of New Jersey). U.S. 2,937,486, May 24. Apparatus for fastening the ends of a rectangular carton moving along a path.

Box-Blank Folding Machine, Oskar Dorfmann (to Federal Carton Corp., North Bergen, N.J., a corporation of New York). U.S. 2,937,578, May 24. A machine for folding a box blank into a box having a body and an integral cover, comprising a reciprocally mounted body-forming die composed of a pair of relatively movable parallel plates, each having a pair of flaps integrally mounted on an opposite pair of its edges, and normally lying in their respective planes.

Display Carton, Kenneth T. Buttery and Thomas Lugt, Jr. (to KVP Sutherland Paper Co., Kalamazoo, a corporation of Delaware). U.S. 2,937,743, May 24. A display carton comprising a bottom, a rear wall extending upwardly from the rear edge of the bottom, and relatively short, longitudinally spaced top members extending forwardly from the top edge of the rear wall.

Container, Frederick F. Olson (to The B. F. Goodrich Co., New York, a corporation of New York). U.S. 2,937,744, May 24. A container for packaging merchandise which comprises a transparent envelope open at one end and sealed closed at the other end, with a rectangular former inserted into said envelope and imparting a generally rectangular shape to said envelope.

Carrier for a Plurality of Articles, Raymond E. Fink (to The New Haven Board & Carton Co., New Haven, a corporation of Connecticut). U.S. 2,937,747, May 24. A package containing a plurality of articles having a body and flat projecting flanges, which comprises a carrier formed of a sheet of relatively stiff material having a plurality of tongues partially severed therefrom and bent rearwardly out of the plane of the sheet to leave openings through the sheet.

Carton for Wound Yarn, Herbert Browning and Branch Hammock (to E. I. du Pont de Nemours & Co. Wilmington, a corporation of Delaware). U.S. 2,938,625, May 31. A retaining device for a body mounted on a hollow core, comprising a carton, a body mounted on a hollow core in said carton, parallel pads abutting each core, and a V-shaped aperture in each pad.

Closure for Pressurized Vessels, Richard T. Cornelius (to The Cornelius Co., Minneapolis, a corporation of Minnesota). U.S. 2,938,647, May 31. A closure for a pressurized vessel, comprising a neck on said vessel formed with an inner axially extending surface defining a passageway through said neck, a stopper disposed within said neck and provided with an outer surface corresponding with said inner surface.

FREE! THIS CARTON FULL OF PACKAGING INSPIRATIONS

This you should see, this you should have . . . if you design, manufacture, or use cartons! Made of America's most beautiful folding boxboard — No. 90 Ultragloss — it's a sample kit that could spark prize-winning, sales-making carton distinction for you. Higher in gloss, superior in performance, and lower in price than any comparable grades on the market, No. 90 Ultragloss has helped write many success stories. Yours could be next— if you mail the coupon below.

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1 x 8½ x 11	2½ x 2½ x 6
1¼ x 2 x 3	2½ x 2½ x 8
1¼ x 2⅞ x 4⅜	2½ x 3½ x 5½
1¼ x 3½ x 3½	2½ x 3½ x 6¾
1½ x 1½ x 3	2½ x 4 x 6¼
1½ x 1½ x 4	2½ x 8½ x 11
1½ x 2⅜ x 3½	2⅞ x 2⅞ x 2¹³⁄₁₆
1½ x 2⅞ x 5¾	3 x 3 x 4
1½ x 3¼ x 5¾	3 x 3 x 6
1½ x 5½ x 7¾	3 x 3 x 8
1½ x 8½ x 11	3 x 3 x 10
1¾ x 2½ x 4	3 x 5½ x 5½
1¾ x 2¾ x 3	3 x 5½ x 8½
1¾ x 3¹⁵⁄₁₆ x 6⅝	3 x 8½ x 11
1⅞ x 2 x 3⅜	3¼ x 5 x 7¼
2 x 2 x 3	3⅜ x 3⅜ x 3⅞
2 x 2 x 4	3½ x 4½ x 5
2 x 2 x 7	3½ x 6 x 8½
2 x 2¾ x 4	4 x 4 x 4
2 x 3 x 5¼	4 x 4 x 6
2 x 3 x 11	4 x 4 x 8
2 x 3½ x 5	4¼ x 4¼ x 4⅞
2 x 4½ x 7¼	6 x 8
2 x 5 x 11	9 x 11½
2 x 8½ x 11	11 x 13½
2⅛ x 2⅝ x 5	12¾ x 15
2⅛ x 4¼ x 6	9¾ x 12¼
2¼ x 7 x 7	13 x 18
2⅜ x 4⅜ x 7⅜	17 x 21

ABOVE SIZES IN STOCK FOR IMMEDIATE SHIPMENT.
SEND FOR PRICE LIST and SAMPLES

SHORT RUNS *Our Speciality*

If none of the stock sizes fit your requirements, we can make as few as 100 special size cartons at a very modest cost. Send us your item or size.
QUOTES and SAMPLES on REQUEST

FREE
CALLING CARD FILE

We would like to send you this gift to put on your desk—your name on the cover. Type your name on your letterhead and send it to us. No obligation.

CALUMET CARTON CO.
Folding Division • Homewood, Illinois

Non-food aerosols hit record high of 575 millions

Production of non-food aerosols in 1959 reached a record high of 575 million containers—some 22% greater than the 1958 figure—according to the ninth annual Aerosol Pressure Products Survey conducted by the Chemical Specialties Mfrs. Assn. The total retail value of these non-food aerosols is estimated at approximately $750 million.

The report, presented at a recent meeting of CSMA's Aerosol Division, was compiled from questionnaire data submitted by fillers, container manufacturers and valve suppliers from throughout the country. Replies were tabulated and the information correlated for CSMA by an independent firm of certified public accountants.

According to the pressure-products survey, the production of hair sprays and dressings in 1959 led the non-food aerosols field for the fourth consecutive year, with an output of more than 79 million units. Even so, this figure was down 14% from 1958. CSMA makes the parenthetic note that this drop "is probably the result of some unfounded adverse publicity regarding the product, as well as legal action regarding patents."

Running a close second in non-food aerosol production is the category of shaving lathers. These products last year accounted for nearly 73 million package units, an increase of approximately 60% over the figure for 1958.

Together, the two product categories of hair preparations and shaving lathers now total 30% of all non-food aerosols produced in this country.

One of the fastest gainers in the pressure-packaging field, as revealed by the CSMA survey, is aerosol coatings and finishes. These items last year were up 75%, to a total of more than 52 million spray containers produced. Another fast mover is room deodorants. Production of pressure-packaged air sweeteners rose from 49 million containers in 1958 to almost 60 million in 1959, for an increase of approximately 20%.

The product category of insect sprays (including space insecticides, residual insecticides and mothproofers) has maintained its important role in the field of non-food aerosols. The 1959 production total for insect sprays was just under 66 million. A significant increase was noted in residual insecticides, where can production last year was some 33% higher than it was in 1958.

Another product group showing a marked increase is colognes and perfumes, with a 1959 volume of 34 million packages. This figure is more than double that for 1958. It is interesting to note that metal containers are moving into greater prominence in this product category. They accounted for about 13 million of the 34 million aerosol units produced last year.

Aerosol-packaged waxes and polishes—which had been listed in previous CSMA pressure-packaging surveys in the accumulative "other household products" group—have now achieved a volume justifying individual mention.

Testimony to the growing importance of these products is the fact that the waxes and polishes category in 1959 accounted for nearly 12 million containers. Both household and automotive products are included in the grouping.

Other product categories for which 10 million or more spray containers were produced in 1959 include: glass cleaners (18 million), shoe or leather dressings (14 million), dental cream (11 million) and medicinals and pharmaceuticals (10 million). All these categories showed impressive container-production gains from 1958, with the exception of dental creams, which was off about 8%.

The CSMA survey also reveals that while aerosols in sizes of 6 oz. or under still are the most popular units of sale, economy-sized 16-oz. containers are gaining favor and now account for more than 25% of total output. The jumbo cans are particularly adaptable to spray paints, insecticides, hair sprays and glass cleaners.

For the first time, the survey also includes a separate report on Canadian production of non-food aerosols, which totals about 3% of the U.S. figure. According to the report, the Canadian aerosol packagers last year filled a total of just over 20 million non-food aerosol containers, all but 1,300,000 of them being metal cans. ●

CARTONS OF ALCOA ALUMINUM catch the customer's eye . . . give instant product identity . . . instant sales. Be it freezer, refrigerator, or shelf item, cartons of aluminum give your product that "look of quality and value." From frozen foods to cosmetics to beverages, aluminum cartons glisten with sell . . . go right on selling even after the purchase is made. Remember, attention-getting foil cartons can boost your product into a higher sales bracket. We invite your inquiry. Aluminum Company of America, Box 1655-H, Pittsburgh 19, Pa.

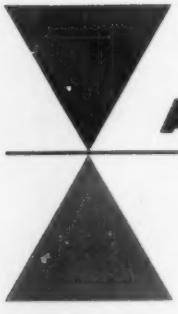
Better Packaging

ALCOA ALUMINUM

Foil Packaging

Put Alcoa's up-to-the-minute aluminum packaging services to work for you. We create new designs, check costs, answer questions on anything from appearance to performance. We offer you full-scale research facilities . . . merchandising and marketing data . . . the most sales-minded approach in the industry. All mobilized by Alcoa to help you design it . . . apply it . . . sell it.

When you think about packaging . . . think about these many ways to better packaging . . . with ALCOA ALUMINUM. Alcoa concentrates on all kinds of packaging. You name it! Cans, cartons, bottle caps, jar caps, labels . . . everything! Alcoa, working hand in glove with America's top package manufacturers, assures you that the look of your aluminum package will have the distinctive style and bounce that makes the buyer want to buy. Alcoa puts its extensive research facilities to work for you. Want to know how that new aluminum package will affect your product's shelf movement? Alcoa will test it for you. Merchandising and marketing data are at your fingertips. Alcoa, with the most creative, sales-minded design approach in the industry, invites you to write in for more information on one of its favorite subjects: Alcoa Aluminum Packaging. Write to Aluminum Company of America, 1655-H Alcoa Building, Pittsburgh 19, Pa.



Better Packaging

ALCOA ALUMINUM

Foil Packaging

New Slant on Purchasing Paper

Crossett Machine Time Plan lets each customer get his paper precisely as and when ordered, at a fair price, whatever the state of the paper market.

Each of Crossett's regular customers reserves specific amounts of *machine time* for definite periods each month. In effect, each customer "owns the mill" for the time required to produce his specific requirements.

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Crossett
PAPER MILLS

A Division of The Crossett Company, Crossett, Arkansas, makers of paper, lumber, charcoal and chemicals. All from managed forests

for clear, skin-tight packaging of

CHEESE

(and a variety of products)

new shrinkable, oriented

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PVC FILM

New Reynolon oriented PVC film offers an ideal solution to better, less costly packaging of many food items—cheese, poultry, meats, fruits, vegetables plus a wide variety of other items such as window shades, stationery supplies, paper products and others.

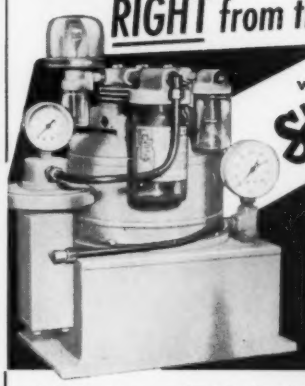
In addition to economy this new Reynolon film also offers you these advantages: It is crystal clear. It is shrinkable—provides a skin-tight package. It has high tensile strength, offers low temperature flexibility, has good shelf life. It is printable and sealable by heat or by adhesives. It can be metalized. It is easily laminated to paper, chipboard and other materials.

For details and technical assistance on Reynolon films, contact the Reynolon Plastic Specialist in the Reynolds office in New York, Camden, Detroit, Chicago, St. Louis or Los Angeles. Or write *Plastics Division, Reynolds Metals Company, P.O. Box 2346-RM, Richmond 18, Virginia.*

REYNOLON PLASTIC FILM

PLASTICS DIVISION
REYNOLDS METALS COMPANY

Control the Web RIGHT from the BEGINNING



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A versatile, economical process! Current users confirm such advantages as: last-minute application of special prices, premium offers and other variable information . . . over-print correction of obsolete copy to salvage costly inventories . . . elimination of pre-printed materials when designs are 5½" x 5½" or less . . . reduced web breakage through use of virgin film.

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At Milprint good packaging ideas give way to constantly better packaging ideas through the forced draft of dynamic research, including tests that subject packages to extremes of cold, heat, dryness and humidity.

Many of today's most successful packages are Milprint *custom combinations* of several materials designed specifically to product needs. At Milprint no particular packaging material or printing process is favored because *Milprint offers you the widest variety available anywhere.* This "open mind" approach by America's pioneer in flexible packaging can give your product a better package at economical cost. Call us and let us prove . . .

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Packaged apparel: big new sales builder for food stores?

"The potential volume of apparel sales in food stores during the next five years might very likely reach five billion dollars annually if proper self-service packages for basic staple items of apparel are developed, and if these self-service packages can be sold from existing shelving and if they can be handled and distributed by personnel in the food stores on a full 52-weeks-of-the-year basis."

This provocative quote is from a new booklet issued by American Can Co., New York. Titled "The Sales Potential of Packaged Apparel in Food Stores," it was prepared from a Canco study of the growth, development and potential of soft goods in food outlets.

The study makes the point that acceptance of packaged apparel by food stores actually will serve to boost store traffic (and consequently have a good effect on over-all sales volume) during the normally sluggish early-week period. Canco points out that while Monday, Tuesday and Wednesday are traditionally weak transaction days in food markets, these days normally are busy selling days in apparel stores.

Other inducements cited for the stocking of packaged apparel by supermarkets and other food stores are the attractive dollar volume and profit margin it affords. Canco sums it up by noting that for every 12 units of average-priced apparel a supermarket sells, it must sell 44 units of a grocery item to do the same dollar volume. Similarly, the report continues, the average margin of an apparel item is 30%, compared with the average margin of 19.8% for a grocery item.

Packaging that is geared to the demands of self-selection marketing may prove to be the determining factor in the successful retailing of apparel in food stores, according to the study. Several rules are set down for the type of packaging required for apparel. They are:

1. The package must have a colorful, descriptive wrapper or label to do a selling job that is normally performed by signs or other point-of-purchase display material.

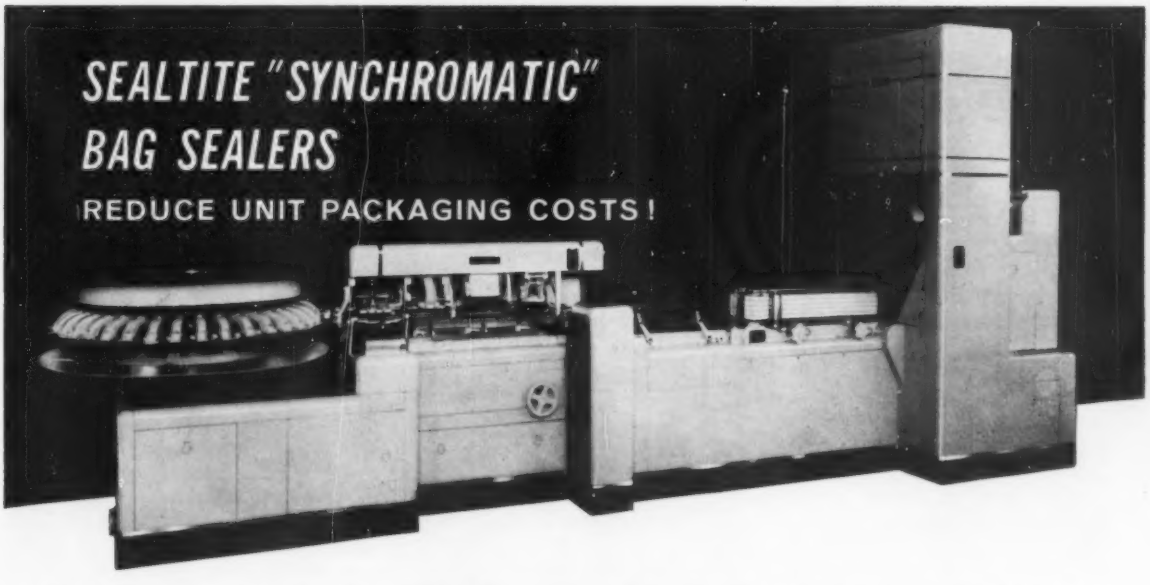
2. Label information must induce the shopper to take the package off the shelf and buy it.

3. The package must be space saving. The amount of money invested per item stocked can bring a profitable return if the apparel is properly packaged and sold from food-store shelves.

4. The package must be economical, not only intrinsically, but also in such "back-room" areas as marking and stocking costs. It is pointed out that the rigid fibre can developed for apparel packaging can be handled by store personnel just as they would handle a standard rigid, stackable food container.

5. It must discourage pilferage.

The Canco booklet, which runs 70 pages, also discusses the sales potential of "canned" apparel in automatic vending machines. It notes that the unique apparel of venders (they can be located conveniently in almost any high-traffic area; they are "open" 24 hours a day every day) can make them prime movers of packaged apparel if consumers can be educated to think of the machines as miniature stores. ●



SEALTITE uses any standard gusseted bag—fills 30 to 50 a minute—and seals them with uniformly glued, prescored, double folds.

Packages are delivered well settled and neatly squared at top, bottom and sides. Stack easily. Sift-proof uniform closure on all bags. Seals are strong and tamper proof, yet readily opened. A tailored package fitted to the contents and with maximum merchandising value.

Users report that *Sealtite* reduces costs considerably per month per machine. It will pay you to investigate. For complete information write:

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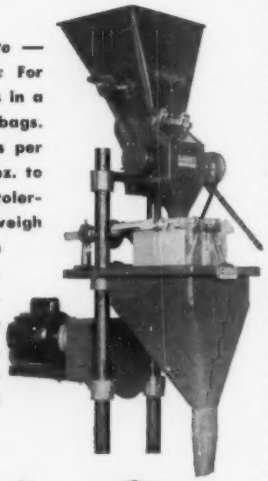

Flexible, versatile, accurate — Model B-PFK Net Weigher: **For coffee, teas, powders, seeds in a variety of containers and bags. Speed: from 40 to 60 units per minute in weights from 4 oz. to 3 lbs. Remarkably close tolerances result from balanced weigh bucket loading, short stream fall and fast cut-off. Adaptations of the B-PFK for gravity or vibratory feed are available from ½ oz. up. This steady performer belongs wherever flexibility is the byword.**

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WEIGH RIGHT Automatic Scale Co.

WEIGH RIGHT AUTOMATIC SCALE COMPANY
JOLIET • ILLINOIS • U. S. A.

'Smallest supermarket' aids packagers in design and display

A new Creative Marketing Center recently set up by the J. Walter Thompson Co. in its New York office is designed to assist Thompson clients in evaluating package design and point-of-sale material, and to aid in solving special grocery and drug product display problems.

The new Thompson facility is a full-scale mock-up of essential display areas of a supermarket. The types of shelving, the gondolas and the drug section are identical with those found in major retail supermarkets, enabling packages to be judged in simulated competitive situations, in proper relationship to competitive products. Deal packs, premium offers, point-of-sale material, as well as packages and labels, can be closely scrutinized for potential customer impact, shelf appeal, legibility, size and color.

In addition, the Marketing Center also provides clients with a ready-made "set" for taking photographs for trade advertisements, sales brochures, etc., under realistic supermarket conditions.

Described as "the world's smallest supermarket," the Marketing Center is equipped with two sections of wall shelving 16 ft. long, a movable 8-ft. gondola section, two 4-ft. sections for end-aisle use or for continuation of the gondola section. The 8-ft. wall section for drugs and cosmetics is fronted by two 3-ft. portable counter units that may also be used as check-out counters.

World's smallest *supermarket is this "store" in the New York office of J. Walter Thompson ad agency. Packages, display units and shelf arrangements can be developed, tested and photographed.*

Thus far, in its short time of use by Thompson clients, the Creative Marketing Center has produced such ideas as a new and simple shelf clip that can't be dislodged by customers, a shelf rack so designed that it becomes the focal point of a whole store section and a new and different way to present on-pack premiums.

Among the packaged-goods clients utilizing the new Marketing Center are Scott Paper, Standard Brands and Lever Bros. Agency personnel developed a metal display rack for merchandising envelopes of Fleischmann's dry yeast and developed a magnetic board with color chips that revealed the chaos created by the current hodgepodge of soap and detergent shelves and, as a result, worked out a plan for better shelf arrangements of liquid and dry detergents and soaps.

The Thompson agency cites the recent use of the Center by a client in which both time and money were

Tri-Sure® Engineering Service is extra assurance of product safety!

When you specify Tri-Sure® closures for your steel shipping containers, you get top quality that meets every requirement for the complete protection of your product.

And Tri-Sure Engineering Service gives you an extra measure of safety.

The Tri-Sure Engineering Representative visits your container manufacturer regularly to help make sure that the installation and assembly of the Tri-Sure closures are correct. In addition, Tri-Sure engineers periodically check filling operations at every plant where Tri-Sure closures are used.

Tri-Sure Engineering Service is one more reason why leading packers rely on Tri-Sure closures for absolute protection of the products they ship in steel containers.

Whenever you order drums specify Tri-Sure closures. And for the answer to any closure question call or write.

Tri-Sure® CLOSURES

AMERICAN FLANGE & MANUFACTURING CO. INC.

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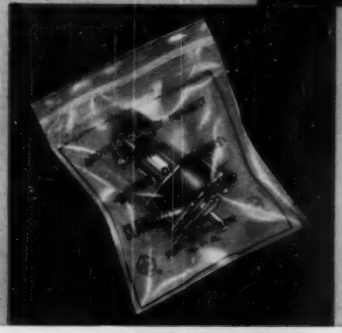
CANADA - AUSTRALIA - MEXICO - BRAZIL

KEEP MOISTURE IN...
KEEP MOISTURE OUT
with kennedy packaging

MOISTURE IN.....

Delicate dentures are shipped from laboratory to dentists in liquid-filled Zip-Lip bags in cartons, assuring safe arrival, economically.



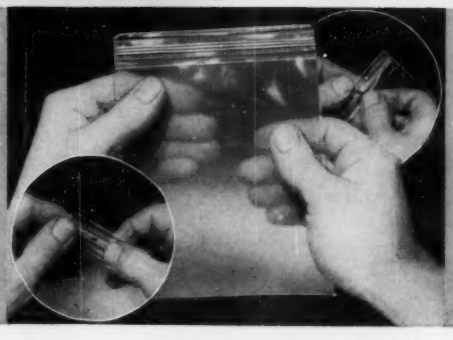
MOISTURE OUT

Intricate electrical components easily damaged by moisture and high humidity are protected in storage and shipment in Zip-Lip bags.

with the kennedy Zip-Lip you

reseal / reopen / repeatedly

TO CLOSE



TO OPEN

when your package must
PROTECT/ENHANCE/REVEAL/SELL
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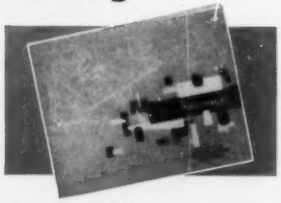
kennedy

Write today for your free copy of "This is Kennedy," illustrated 16-page brochure.



KENNEDY CAR LINER AND BAG CO., INC.
3000 Prospect Ave., Dept. , Shelbyville, Indiana
Offices in most principal cities. See the yellow pages in your phone book.

saved in taking photographs of one of its products to be used in trade-paper advertisements. The gondola units were used to reproduce the supermarket food section desired, models and a photographer were called in and photographs were taken. The display was left in place while prints were made during the night for client approval. The client requested a minor change in the display, the change was made and new photographs were taken and approved on the same day. No longer required is the normal agency procedure of pre-arrangement with a supermarket to take photographs while the store is closed or the costly travel time by agency people, models and photographers. ●

Path to F&DA approval

[*Continued from page 110*]

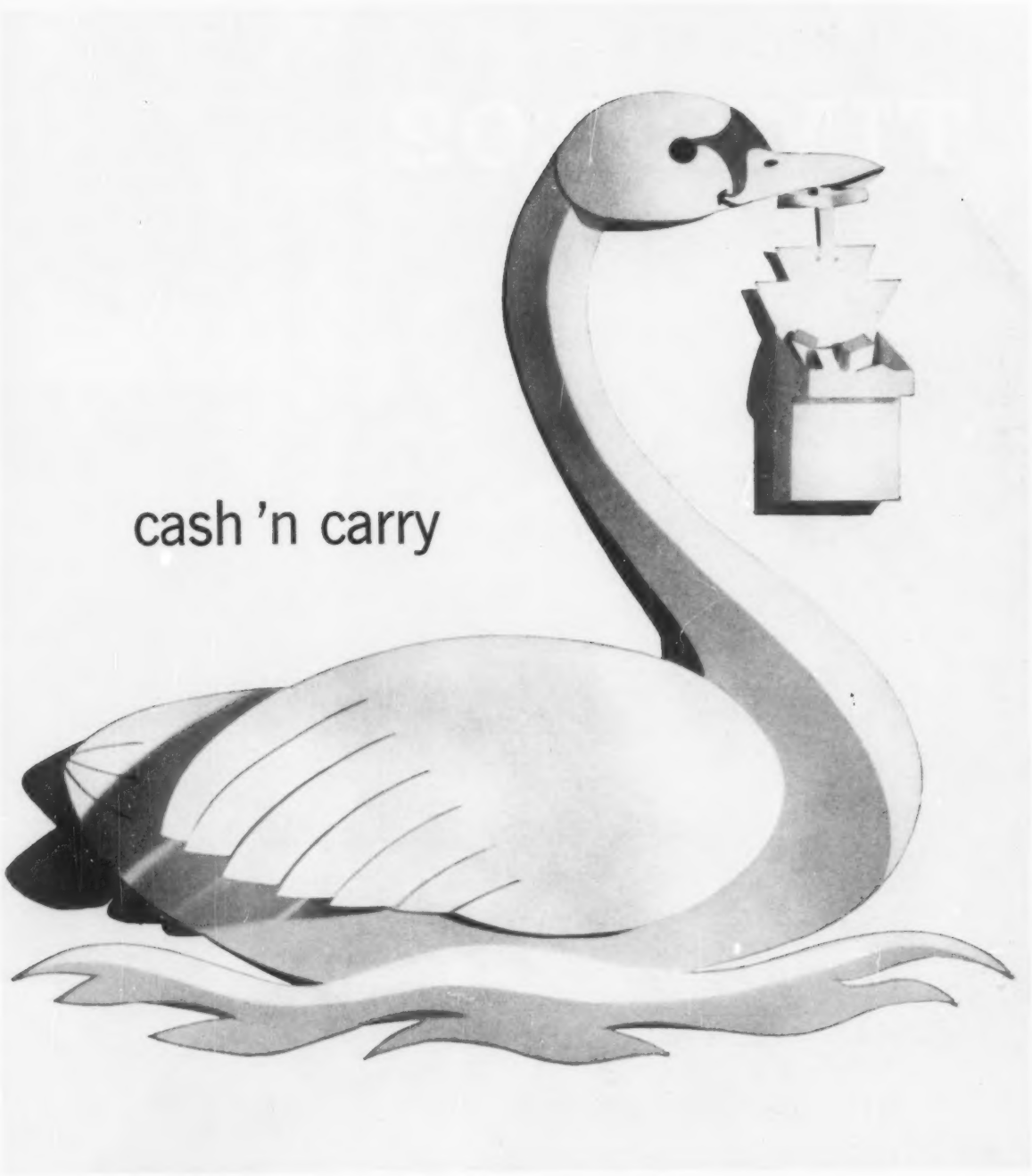
with the RSV technique for specifying low-molecular-weight migrants and suggested five or six solvent-extraction methods it felt were more satisfactory. Discarding the RSV process, Hercules chose xylene, ethyl acetate and n-hexane as the most feasible solvents and worked out the solubility specifications that appeared in the final order, filing this information with F&DA in December 1959.

Ruling that these 29 pages of additional data constituted a "substantive amendment" to the petition, F&DA officials assigned a new filing date to the petition—giving them another 180 days in which to act.

Final action, however, came in slightly more than 90 days and polypropylene won final approval on April 16, 1960.

The principle of clearance by specification should have sweeping significance for packagers and suppliers who are willing to make public the physical and chemical reference points that define a specific package or material, since this combination of technical and legal principles offers the first practical method of complying with the law's demands for testing methods.

Radiological techniques for both chemical and animal testing, while necessitating substantial initial investment, may also produce long-term economies by shortening test periods for those companies involved in continuous clearance work. ●

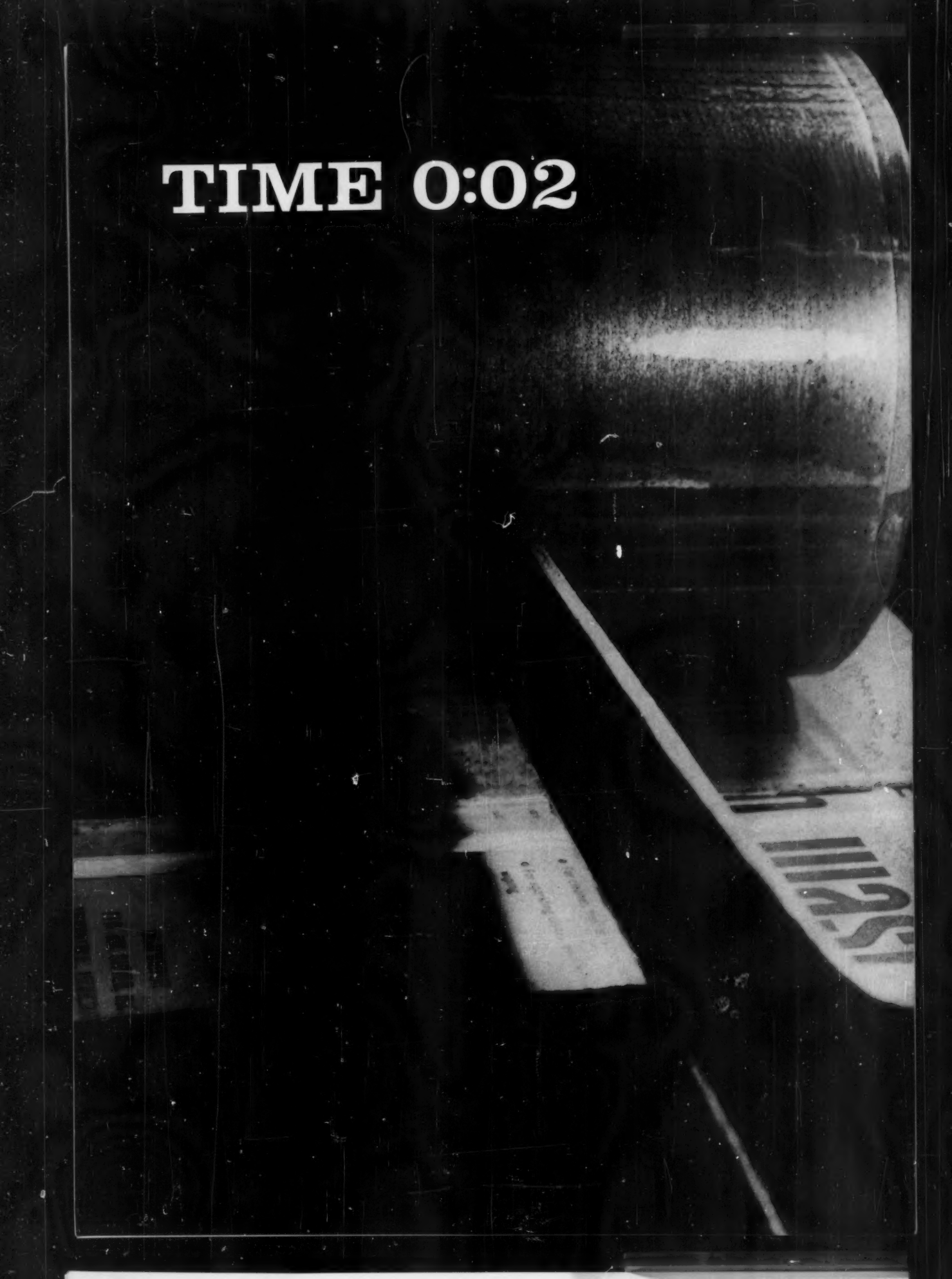


KRAFTSMAN WHITELINER

Kraftsman Whiteliner is uniquely qualified for superior corrugated containers to carry goods to market . . . and for self-selling displays, too. It is a bright, blue-white test liner of remarkable brilliance and smoothness—excellent for reproducing fine printing detail. Scuff-resistance, toughness and strength add to the versatility and economy of this outstanding display linerboard.

For samples write Kraft Division Sales, West Virginia Pulp and Paper Company, 230 Park Avenue, New York 17, N. Y.

West Virginia Pulp and Paper


TIME 0:02

Seconds that count in the life of your package

You are looking at the most critical seconds in the life of your package.

When the case is sealed, your investment in product development, manufacture, packaging and merchandising are bonded with a film of adhesive thinner than newsprint. The right adhesive at this time is the way to be sure of the arrival of your product at the point of use in perfect condition. Armour Packaging Adhesives can do exactly that kind of a job for you.

Because Armour is a leading manufacturer of adhesives and one of the nation's largest packagers, we maintain a large staff of chemists and technicians skilled in the development and application of packaging adhesives. The Armour technical staff is ready to work with you, in your plant and in the Armour Laboratories to make the critical seconds count for top package performance and production economy.

You can put Armour on your packaging team by contacting your local Armour man or our sales headquarters. Armour Alliance Industries, Adhesives Division, Alliance, Ohio.

SEBAN

Liquid Polyvinyl Resin—ready to use. Special series for carton sealing, case sealing, straight line and right angle gluing, tube winding, window boxes, bags, labels, carrying cartons, laminating, bookbinding, glue-lap.

DRIFLEX

Formulated dry granular animal glue-based adhesive. Available in several grades for high speed paper box operations where rapid tack and non-warp characteristics are required. Also for luggage case-covering, folding-carton and bookbinding. Converts rapidly, has indefinite storage life. Foam-free.

FLEXGLU

Formulated cake-type animal glue-based adhesive. Available in many grades for set-up boxes, bookbinding, case-covering, laminating and luggage. Converts rapidly. Free from foam with good non-warp characteristics. Wide working ranges and sets.

ARMODEX

Liquid dextrin-based formulation. Available in many ready-to-use and dilutable grades for semi-automatic and automatic filling operations, high speed, right angle and straight line gluing, spiral and convolute tube winding, kraft bag side seam and bottom gluing, laminating and palletizing.

ARMOGLU

Formulated animal glue-based adhesive. Available in liquid and jelly forms for folding cartons, woodworking, gummed tape, and binder for non-woven fabrics.

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send for this new pressure-sensitive label planning aid

Here's a kit-full of idea-starters for scores of tough little day-to-day problems found in every business...

For PRODUCT DECORATION, TRIM or IDENTIFICATION . . . New Decor-Stik—metallized Mylar and vinyl composition.

For NAMEPLATES . . . New Name-Stik—Brilliant Foil. No screws or bolts—easy to apply.

For LOW-COST POINT-OF-SALE MATERIAL . . . New Window-Stik—produced on acetate.

For INDUSTRIAL AND POINT-OF-SALE LABELING . . . An idea-packed Able-Stik folder loaded with case-history and use material, with a variety of samples.

for labels useful in **AUTOMATION SYSTEMS . . .** a thorough case-history presentation with working samples.

Write today for your free M.P. kit. You'll find many uses for it.

allen hollander company, inc.

385 Gerard Avenue, New York 51, N. Y.

One-stop labeling and capping of bottles

[*Continued from page 93*]

from what would be needed for two machines. Dr. Sachs says it can change label size in 5 min. and completely switch bottle, cap and label sizes in about 25 minutes.

Bottles are conveyed single file from either a tablet counter or liquid filler into the labeler-capper. A screw feed releases one bottle at a time into the feed gate. This infeed (Station No. 1) is controlled by an air valve. This actuates a clamp which grips the bottle firmly at either side of the neck. Use of an air valve instead of a cam at this point permits clamping before rotation starts and thus gives positive control of bottle position. After clamping, the bottle indexes clockwise to Station No. 2—a no-bottle, no-label detector—which prevents the label-feeding mechanism (at Station No. 3) from operating when no bottle is present.

The machine's label-application station consists of a circulating cold-glue system with vertical glue roll, a horizontal label magazine with back-and-forth thrust and a revolving vacuum head. As the label magazine moves forward, a label is drawn from the hopper onto a vacuum pad, which rotates past the glue roller and transfers the label to a bottle. The label magazine holds up to 3,000 labels.

It is at Station No. 4 that labeling and capping are combined. An air-operated piston drives a shaped pressure pad against the label, pressing it firmly to the bottle's contour at all points. At the same time, a magnetized spindle or chuck applies a metal cap. The cap hopper, positioned above the machine, feeds caps downward through a chute to the chuck. Each cap is transferred from chute to chuck by a steel "finger," powered by a separate air cylinder set in action by a microswitch on the No. 2 station. The finger has a magnetized lug which impels the cap into the chuck. Since the magnet on the lug is less powerful than that on the chuck, the cap is drawn from lug to chuck when the two components make contact.

An important feature of the Dr. Sachs machine is the automatic on-off action of the cap holder. When the 20-cap chute is full, rotation of the hopper is automatically suspended until the chute again needs filling. This prevents unnecessary movement of caps in the hopper and reduces the incidence of chipping and denting.

Station No. 5 is blank to allow time for the adhesive to penetrate the label's paper fibres. At Station No. 6, the second pressure station, both labeling and capping functions are again combined. A second shaped pad applies final pressure to the label, affixing all edges securely to the bottle while holding the bottle in place for final cap tightening. Since Dr. Sachs uses only two cap sizes for all its bottles, the second chuck fits both and does not have to be changed at any time. The first must fit the cap size exactly, so Dr. Sachs has two sets of chuck parts for Station No. 4.

Another plus feature of the machine, according to Dr. Sachs, is its ease of torque adjustment on the two chucks. A quick twist of the two chuck locking rings is all that is required.

Station No. 7 is left blank for added adhesive-drying time. At Station No. 8, the clamp at the bottle neck is raised for bottle discharge onto a turntable and then to an accumulating table for packing into cartons.

This is Dr. Sachs' first completely automatic packaging machine. The diversity of the company's product line—more than 300 proprietary items—had formerly seemed too great an obstacle to automation. However, the flexibility of the new labeler-capper appears to be just what the doctor ordered. ●

Corrugated news stand

A colorful corrugated display stand is being used by The Indianapolis Newspapers, Inc., to promote sales of its two properties, *The News* and *The Star*. The low-cost stand is printed with appropriate promotional copy. According to the publisher, the display unit has opened up such new distribution areas as filling stations and supermarkets. Extra newspaper copies are stored in the stand's spacious bin.

SUPPLIES AND SERVICES: Stand by Westvaco's Hinde & Dauch Div., Sandusky. ●

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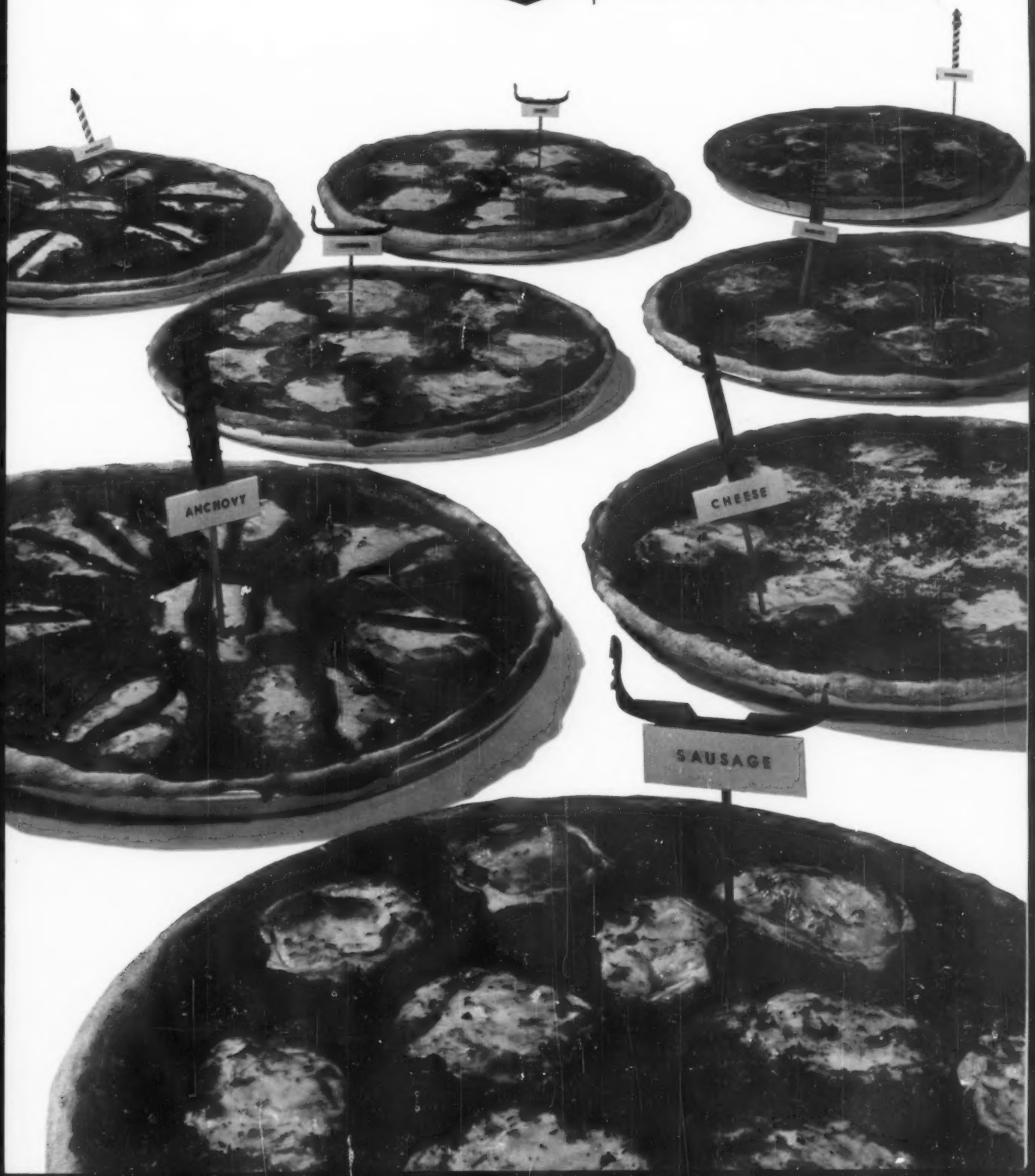

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BOTTLE HANDLING EQUIPMENT. 4-page illustrated brochure gives catalog information, describes features and applications of machine designed to handle shipping cases with inserts and 6 contenders or more per case. Specifications. MacArnett Engineering Co. **(H-053)**

CAN SEALING MACHINE. 5-page illustrated brochure describes line of automatic can sealing machines, features and applications, with handling capacity up to 120 units per minute, sizes up to 1 gallon. Newman Tool Co. Inc. **(H-054)**

CASE SEALING MACHINES. 4-page illustrated brochure describes features and applications of a line of machines designed for the sealing of packaging and shipping cases of various sizes. National Equipment Corp., Packaging Div. **(H-055)**

ROLL LEAF MARKING EQUIPMENT. 6-page illustrated catalog folder describes features and applications of a range of light, medium, and heavy duty presses designed for roll leaf marking. Specifications and data. Olsenmark Corp. **(H-056)**

CUTTING AND CREASING EQUIPMENT. 6-page illustrated folder describes features and applications of creasing and cutting equipment designed to handle a wide range of boxboard material as well as other packaging materials. Orie Stone Assoc. **(H-057)**

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F&DA committee

Creation of a watchdog committee to rule on the carcinogenicity of food and packaging chemicals has been proposed to President Eisenhower by a scientific fact-finding group that has been probing the effectiveness of the Food Additives Amendment to the Food, Drug & Cosmetic Act.

The special board would be composed of cancer experts from the Food & Drug Administration and the National Cancer Institute, plus scientists nominated by the National Academy of Scientists. It would consider evidence and make recommendations to F&DA on the safety of both new and established chemicals used in food preparation or food packaging.

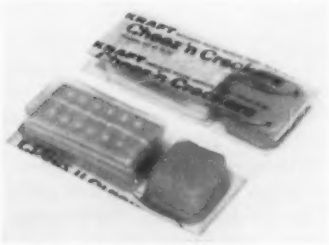
While this new study group is expected to act informally and only concern itself with chemicals suspected of producing cancer, it closely resembles an existing committee that works with F&DA under the 1956 Pesticide Amendment to the Food & Drug law on the toxicity of insecticide chemicals. This latter group is appointed by F&DA from a group of scientists who were previously nominated by the National Research Council.

Noting that the definition of a carcinogen in the law is subject to considerable interpretation, the President's study group asserts that "the rapidly increasing number of new chemicals potentially useful in food production demands vigilant and careful scrutiny of the compounds offered in order to safeguard the consumer from those that may present cancer-inducing hazards." However, the "rule of reason," the group said, should be followed to carry out the intent of Congress, since many variables enter into a decision as to whether a substance is or is not carcinogenic.

Spokesmen for F&DA, which favors establishment of the new committee, note that the group would act only in an advisory capacity. F&DA would retain full authority to accept or reject questionable chemicals. The new committee would in no way interfere with recommendations on the general safety of packaging and food chemicals from F&DA's group of more than 800 "qualified experts," since the new advisory board would be concerned only with cancer. ●

Two-compartment portion-control package

Latest of Kraft Foods' "PC" (portion control) packages is a two-compartment unit for an individual serving of crackers and processed cheese. Kraft has been packaging



Twin-product package *of Kraft cheese and crackers is designed for heavy impulse-sales spots.*

jellies and condiments in PC packs for eight years.* But this is thought to be the first package to combine companion products of different consistencies in one single-serving package.

Separation of the product is, of course, necessary to keep the crisp crackers from becoming soggy via absorption of moisture from the cheese. Designed primarily for vending machines, "Cheez'n Crackers" is reportedly also doing very well at such impulse-buying spots as news counters and bars.

Kraft isn't talking about either the packaging material or the production methods used for Cheez'n Crackers. However, the semi-transparent compartmented portion of the package appears to be unplasticized polyvinyl chloride, approximately 0.008 gauge. Each compartment or well is about 1⅜ in. wide by ⅞ in. deep. The well for crackers is about 2¾ in. long and is nearly straight-sided. The 1-in.-long well for cheese, on the other hand, is molded with slightly sloping sides. Presumably this facilitates filling of the semi-liquid product.

The two wells have an approximate ¼-in. separation between them. The packager's name is molded into the bottom of the cracker compartment. At the top of the compartmented portion of the package is a ¼-in. flange all the way around, to which the cover is sealed.

The cover film is thinner, softer and more transparent than the molded base. Kraft says only that the cover film is either PVC or saran. It is sealed to the protruding flange of the base on all four sides and between the compartments. It overhangs the flange slightly to provide a pulling surface for opening. The pull edge of the cover is equipped with a narrow yellow tape. Whether this is affixed to the film by the converter or is added by Kraft during the actual packaging operation is not known. An arrow printed on the cover of the package points directly to this pull corner.

Kraft has two versions of Cheez'n Crackers, one for vending-machine sale and the other for over-the-counter selling.

Both packages are made identically except for cover printing. Both package covers are printed in one color (a reddish brown to complement the product colors) and carry the product name, brand name, product weight notation and the pull-corner arrow. The package designed for vending-machine selling also has "10¢" printed on the cover film. The package for counter selling carries no price mark. Instead, these items are packed 24 to a paperboard display unit, with a price spot to be filled in by the individual retailer.

The machine used for filling Cheez'n Crackers undoubtedly is a variation of the Kraft-developed machine for other PC's. It is known that the latter achieves filling speeds of more than 300 containers per minute. If the company has succeeded in combining the wet fill and dry fill necessary for this product at anywhere near 300 containers per minute, it is a real packaging advance. For the time being, at least, Kraft won't say. ●

*See "Portion Control," Modern Packaging, April, 1952, p. 90.

Fibre-box outlook

Shipments of corrugated and fibre shipping containers in 1959 were nearly 13% higher than in 1958 and used a record total of nearly 110 billion square feet of board. Shipments in the first quarter of 1960 were up another 2% over 1959. These cheering figures were released at the Fibre Box Assn.'s spring meeting held recently in Chicago. FBA members were further heartened by the rest-of-year predictions made by Peter W. Hoguet, president, The Econometric Institute. He forecasts a total

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1960 volume of almost 113 billion square feet, an increase of 3% over the 1959 record figure.

Not all the news was so good, however. Corrugated and fibre boxmakers are worried about the inroads of lightweight paperboard overwraps into corrugated's previously secure domain. FBA directors declared that they consider paperboard overwraps "a serious threat to the corrug ·ed industry." More than half of the 7 billion square feet of 125-lb.-test corrugated produced annually in the U. S. is threatened by this new trend, the directors estimated. They defined the three major types of overwrap competition: (1) a sheet cut from roll stock with tucked, glued ends, as now used by General Foods for Jell-O; (2) the longitudinally seamed sheet resembling an open-end carton, as now used by Pillsbury Mills for Ballard biscuits (see MODERN PACKAGING, March, 1960, p. 172), and (3) the die-cut tube with folded, glued ends, :s now used by SOS for scouring pads. All three types are said to menace corrugated sales. For the time being, at least, the association will take no special action. However, it has instructed its staff members to step up their efforts to prove corrugated's superiority. It is said that some new research programs will be launched by FBA to fight overwraps in the near future.

FBA's statistician, A. A. Newburg, outlined the industry's financial position. Although certainly much better than 1958, his figures were not bright. Labor costs are up 50.9% from 1952, containerboard (in a weighted average) has increased 5.8%. While 1959 sales were up 5.8% over 1952 and 2% over 1958, Mr. Newburg warned that the sales gain has not kept pace with cost increases. The average boxmaker's percentage of profit after taxes is only 2.1%. Mr. Newburg thinks this should be closer to 5% and he urged FBA members to raise prices again. (The last price hike was last December.) But much as the boxmakers would enjoy a 5% profit, most of them privately labeled this suggestion as being somewhat "unrealistic" at the present time.

FBA voted to add $10,000 to the $100,000 the National Paperboard Assn. is spending for F&DA-required tests to be conducted on woodpulp and chemicals. ●

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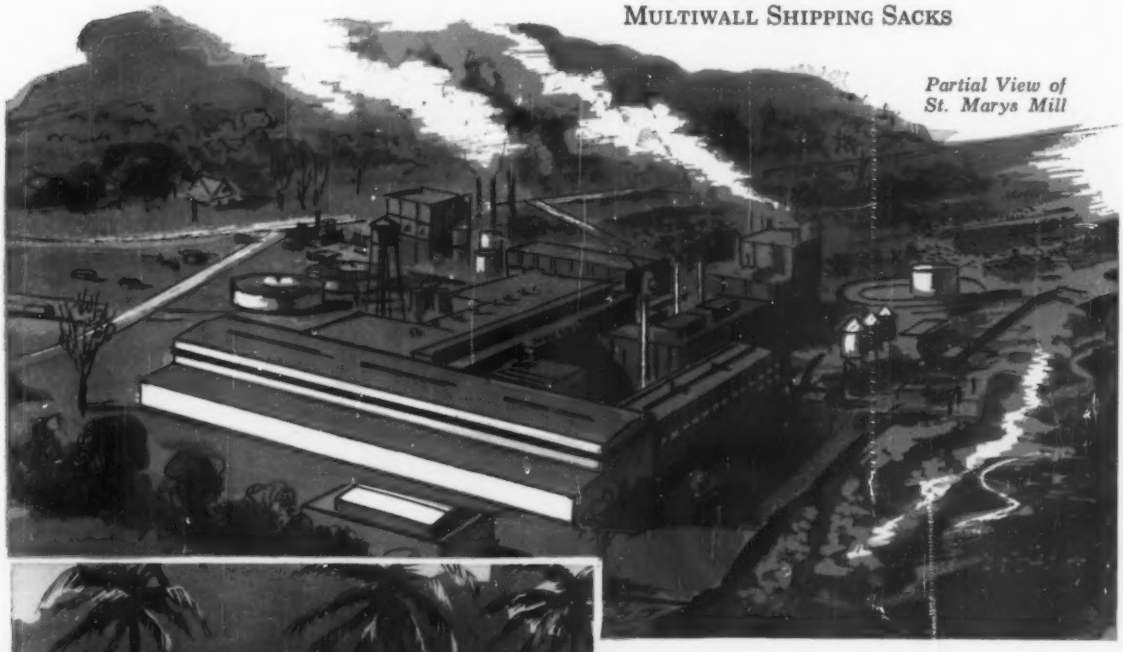

Partial View of St. Marys Mill

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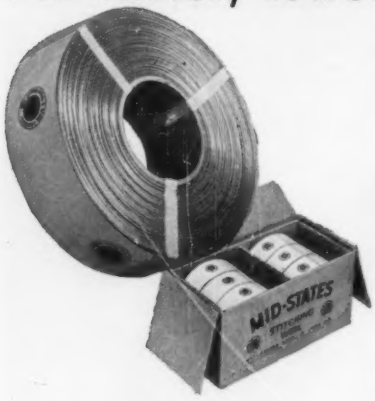

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Cautionary-label law

Federal legislation requiring better labeling of poisonous and hazardous substances brought into the home has been passed by the Senate. The bill has been submitted to the White House for approval. The hazardous-substances labeling bill, as it is known, covers poisonous, flammable, corrosive and other types of chemicals which are not regulated by other laws. It calls for clear label indication of the hazardous substances, which may be contained in household products.

According to the U.S. Public Health Service, every year hundreds of American children and adults die from the effects of swallowing poisonous or other harmful household aids whose containers do not have cautionary labels. ●

Cellophane

[*Continued from page 90*]

obtain thinner (as exemplified by the new ultra-thin laminates) or less expensive films.

Three such low-cost, non-anchored, moistureproof films in 300 gauge, made by improved manufacturing and coating techniques, now sell for 2.95 cents per 1,000 sq. in. and offer a new low price for a heat-sealable cellophane. Of particular importance is the fact that these materials reportedly also combine both dimensional stability and low-temperature durability. And while the films employ conventional nitrocellulose coatings for heat-sealing, these compounds are reported to be applied by a new technique that assures strong seals under even marginal packaging conditions and smoother wrapping operation.

A notable early user of one of these films is the General Baking Co., New York, which employs this economical material as a general-purpose wrap for white bread and as a tray overwrap for brown-and-serve rolls and English muffins. Replacing conventional lacquer-coated cellophanes, the new film produces economies and better performance on wrapping machines.

Hand in hand with the development of new films has been a determined broadening of applications for cellophane as the incorporation of new properties has enabled it to meet the growing needs of marketers

for more ingenious and more attractive transparent packages.

A growing area of application is in multipackaging and fractional packaging of foods and drugs. Initiated for institutional-unit packages of cookies and crackers, cellophane pouches have been adapted as containers of these and other foods and pharmaceutical products intended for retail sale. Such fractional inner packaging adds convenience in use, longer shelf life and increased product protection.

Multipackaging of packaged products with wraps started as a convenience for distributors and dealers in filling less-than-case orders, but has now spread to deal packaging of both foods and household products. This transition has necessitated a change from the simple imprinted kraft-paper wrap used on distributor packs to a transparent film with more consumer appeal. Since the transparent wrap gives a full view of products or inner packages, this bundling technique frequently eliminates any need for imprinting—an advantage that has led increasingly to the use of cellophane for even distributor packages.

A pioneer user of these techniques is Warner-Chilcott Laboratories, Inc., Morris Plains, N. J., which uses both unit packaging and bundling for its Gelusil tablets.[5] This highly sensitive pharmaceutical is strip packaged in cellophane, enclosed in a carton that is overwrapped with polymer-coated cellophane and then bundled into groups of six cartons, also overwrapped with polymer-coated cellophane. The final package is not only attractive, but provides the high degree of protection from water vapor needed to give these tablets long shelf life.

Thermoplastic films have captured most of the headlines during the past few years, primarily due to their rapid improvements, growing acceptance and drastic reductions in price. This plethora of use and publicity has tended to throw into shadow the quieter advances of cellophane, which went through its crucial development stage more than 30 years ago. Yet, the new advances in this sturdy packaging standby today are no less real and—with the current research effort—may produce equally dramatic new applications in the near future. ●

[5] See "Step-Up In Strip Packaging," MODERN PACKAGING, Nov., 1959, p. 146.

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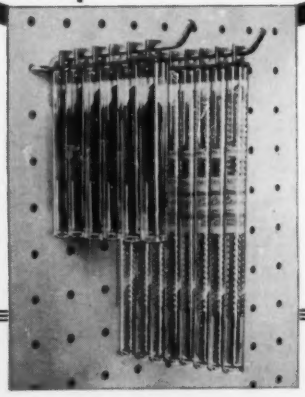

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Sounding Board

[*Continued from page 65*]

a slightly different slant. Our package designer developed two sets of dummies when we decided that Epoxy Weld deserved a new, brighter package. One featured a backing card of bright orange, which displayed the word "Weld" on a sunburst. The other card showed an elephant hanging from an invisible hook and proclaimed that "a dab will hold an elephant."

Dealers in three New England states and in New York State were asked to select the more attractive package. The elephant won by a complete landslide.

Our dealers are experts about their products. They know what makes a package sell, so their ideas on design, label information and size is important to our package designing.

After all, what good do we get if a package design is rejected by the company president only because he doesn't like it?

The ultimate decision rests with the consumers. So we tested our Epoxy Weld packaging ideas with them almost in their own backyards —their neighborhood supermarkets.

Shoppers who took the package from the shelves were asked why. Some couldn't tell us. Others wouldn't and appeared nervous. Several remarked, "If it can hold an elephant, it can do my job."

In cases when we couldn't inquire, we counted food baskets that contained the product, hoping to evaluate their attraction in this fashion.

We at Traffic Control, Inc., feel that these two package tests have proved themselves, for we feel that our package is meeting all the goals we set for it.

Ringling Bros. and Barnum & Bailey brought their circus to Boston in May. A ticket promotion involving the "greatest show on earth" and the "world's strongest mender" invited customers to climb aboard "the elephant a dab could hold" to come see the Big Show.

Within a few days, thousands of youngsters (of all ages) knew the elephant we didn't dare use until consumer research showed us how.

Harry T. Cleevely, *Purchasing Agent, Hanlon & Wilson Co., Inc., Pittsburgh:* The best possible way to employ consumer research is through your manufacturer's representatives, distributors and wholesalers, who can give you first-hand information. Salesmen who go out into the market can give you the most valuable information. As purchasing agent, I often take occasion to call on everyone I have been associated with and often times many whom I don't know but who I feel can obtain valuable information which will help me solve my problem, or who will give me information or advice to get me started on the right track.

In planning any package change, I would call a couple of representatives and get their comments. They are the ultimate fellows who put the product into the consumer's hands. I would place a lot of weight on how the representatives feel about a package change, for they are the ones who are in contact with the customer and the ones who will correlate information that is obtained from the dealers.

Another way to employ consumer research is by letter survey. A questionnaire could be devised which would make a person adopt the attitude that he wants to complete this questionnaire and do it in the best way he knows. This takes a bit of psychology and hard work, but it reaps rich dividends.

Samuel J. Miller, *Vice President-Technical, Du Bois Chemicals, Inc., Cincinnati:* The type of consumer research that we employ is due to the structure of our firm and industry. Sales are limited to industrial and institutional users only and each customer is contacted at least once a month by one of our 600 salesmen. The salesmen are trained to discover, observe and make notes of the customer's preferences, his dislikes, the trends in the product and package changes, etc.

We find this intimate, frequent contact between the salesmen and users to be the best consumer research available to us. For instance, not long ago the sales force observed that some of our detergents would be better received if the various ones could be more easily distinguished from one another. As a result of this we have changed the color of some of the detergents and the colors of some of the cartons. The customers have responded very favorably to this innovation. ●

New polypropylenes

Enjay Chemical Co., Div Humble Oil & Refining Co., reports that it will market polypropylene resin at three viscosity levels: 1½, 3½ and 5½ melt index, measured at a temperature of 230 deg. C. The three viscosity levels to be offered by the company are designed to satisfy a wide range of needs. They will permit processibility for quality plastics products without loss of strength properties, as well as high resistance to heat distortion, according to the supplier company.

Announcement of the availability of Escon polypropylene—the first plastic product to be offered by Enjay—was made in conjunction with the opening of a new plant geared to produce 40 million pounds of polypropylene resin per year. The plant reportedly has been designed for future expansion that will enable production of up to 100 million pounds annually.

The ultra-modern petroplastics plant is located at the Humble Oil refinery in Baytown, Tex. It employs a continuous process developed by Esso Research & Engineering Co. A key aspect of the continuous process is an improved catalyst invented by Esso chemists.

According to J. E. Wood, III, president of Enjay, the marketing strategy for Escon polypropylene will be based on highest possible product quality, superior field service and the finest laboratory technical service available. He pointed out that since Enjay is a newcomer to the plastics field, successful marketing will depend largely on establishing a reputation for product excellence and for efficiency of service to customers.

Mr. Wood also indicated that additional advances in petroplastics would soon be made by Enjay, including the introduction of a new type of plastic and of a grade of polypropylene possessing excellent low-temperature performance characteristics.

To carry out its research program on plastics, Enjay has added a new wing to its existing laboratory facility. It is reported to contain every type of plastics-fabricating equipment now available. This equipment will be used to solve customer problems and to develop new plastics applications, the company reports. ●

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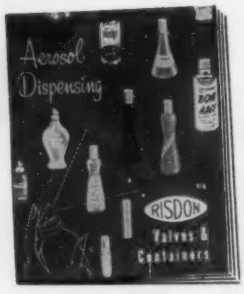

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RI-116

MSU multi-sponsor research proposal

"$200,000 worth of research for $25,000." This is how the Michigan State University's School of Packaging describes its new multi-sponsor research proposal.

The program, says the School, offers a unique opportunity to industrial concerns to participate in a joint industry-faculty-student project, the results of which will aid in solving practical packaging problems for industry and, at the same time, serve as a "pre-recruiting plan" for graduates of the university's four-year accredited university-level packaging course.

Subject of the research proposal is: "An investigation of the physical properties of packaging materials under dynamic loads and the application of such properties to package design."

The university proposes to conduct, on a multi-sponsor basis, a $200,000 research project in the dynamic mechanical properties of plastic, cellulosic and proteinaceous packaging materials. The work is planned along two distinct lines, one involving the evaluation of the energy-absorbing properties of materials used to protect goods from physical damage and the other involving those properties of folding boxboards and flexible materials which affect their use in high-speed package filling and sealing operations. Both problems involve mechanical properties which are time dependent and, consequently, have basic similarities in the order of technical competence of staff required and in the physical equipment necessary to carry on the program. The research program will be carried out over a four-year period.

The laboratories of MSU's School of Packaging are equipped with instrumentation for the conduct of required tests. Complete objectivity in the work is assured since, as the university puts it, "We have nothing to sell but truth."

The cost to each sponsor will be $25,000, payable upon completion of the cooperative research agreement, or as follows: $10,000 on completion of the agreement, $5,000 one year after starting date, $5,000 two years after starting date and the final $5,000 three years after the starting date, which has now been tentatively set for Sept. 1, 1960.

Reports will be rendered at semi-annual seminars to be held at the university for the exclusive benefit of project sponsors. It is anticipated that this approach will give sponsors an opportunity to review the work under way and to become familiar with application techniques as they are developed. Also, the seminars will enable sponsors to share in the guidance of the project as it progresses and thus help assure a maximum return from money and effort expended. Project findings reported to sponsors during the course of the work will be made available for the sole use of such sponsors.

The project will be under the general direction of Dr. James W. Goff, associate professor of MSU's School of Packaging. Members of the university constituting a consulting group include Alexis J. Panshin, director, and Harold J. Raphael, associate professor, School of Packaging; Alan Sliker, assistant professor, Dept. of Forest Products; John G. Turk, lecturer, School of Packaging and chairman of the ASTM Committee D-10; Hugh Lockhart, assistant instructor in the MSU School of Packaging.

Further details on the research proposal may be obtained from Dr. Goff at the School of Packaging, East Lansing, Mich. ●

PI aerosol seminar

Nearly 100 Professional Members of the Packaging Institute gathered in New York recently to hear a panel of 20 experts discuss the latest developments in aerosol packaging. Moderated by F. T. Pickerell, Schering Corp., the group revealed some interesting data on the economics of pressure packaging.

To justify its own captive aerosol packaging line, a packaging company should have an output of at least 20 million units per year, report several production experts. Other packagers justified aerosol operations with less than this break-point volume because of more favorable quality control and write-off of overhead costs.

The quality of today's aerosol components was praised by other packers, who noted that rejection of imperfect cans during processing has dropped to 1.5%. ●

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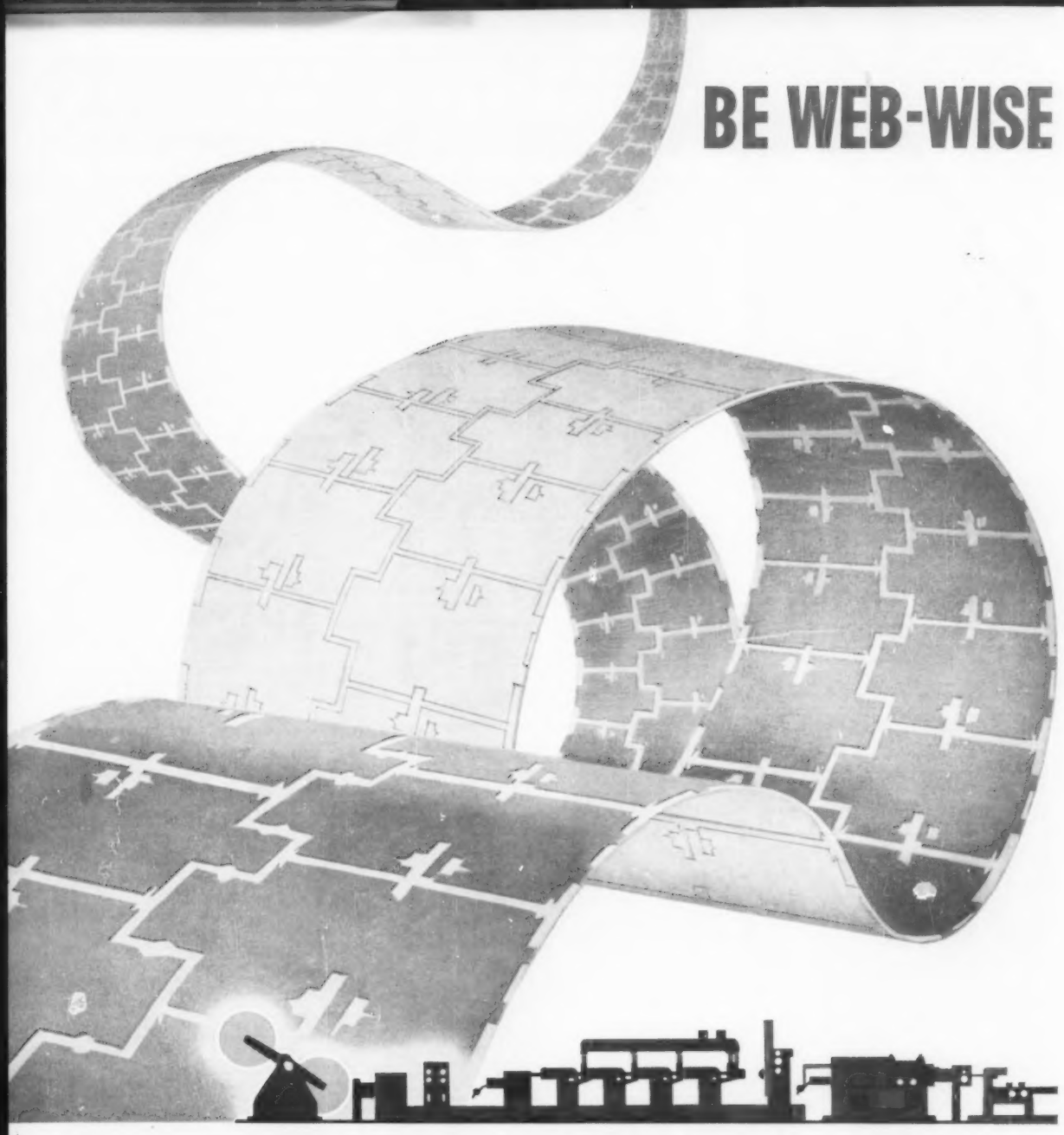

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RUN OUR PLASTICS DIVISION—Be foreman of our automatic vacuum forming and extruding—guide our sales and development. Build your future with our 50 year old concern. Relocation to North Central Indiana. Reply Box 1272, Modern Packaging.

FILM LAMINATION EXPERT—Wanted to operate and head-up a laminating and embossing department for a specialty manufacturer located near Hartford, Conn. Applicant must be experienced in handling film laminations and adhesives. Research and development experience helpful. Salary open. Reply to Box 1273, Modern Packaging.

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MECHANICAL ENGINEER, CHIEF ENGINEER OPPORTUNITY—A young, fast-growing company located in an attractive college community near Minneapolis and engaged in the development and manufacture of diversified plastic packaging machinery and plastic film products is looking for a Mechanical Engineer. Several years' experience in machine design, especially packaging machinery is preferred. Depending on experience and capabilities, the man selected will have an opportunity to be chief mechanical engineer in this company's experimental and product development work. Requirements for this position include solid engineering ability, a capacity for creative, inventive and experimental work; a high degree of personal energy and the ability to work enthusiastically and cooperatively with others. The person selected for this job will work and consult with both degree and non-degree project leaders on packaging machinery development projects, balloon systems, space vehicles, special plastic film applications and electro-mechanical systems. We are looking for an exceptional person for this position. Please reply in writing with personal data, education, experience and present salary to S. M. Hunter, G. T. Schjeldahl Company, Northfield, Minnesota.

MANUFACTURERS REPRESENTATIVE familiar with flexible packaging or printing or cartons, to give aggressive representation in Chicago and Midwest area, exclusive territories, for expanding established converter of cello, poly, foil & other films. Roll stock, sheets, bags; heat seal, glue seal and side weld. One of the finest equipped flexographic converter plants in the United States. Reply Box 1274, Modern Packaging.

PACKAGING DESIGN ENGINEER—Looking for top notch engineer experienced in the design of packaging equipment. Must have proven ability as a designer. Experience in the design of Cartoning Equipment desirable, but not necessary. Company is located in midwest and is an acknowledged leader in its field. Inquiries held in strict confidence. Write qualifications to Box 1275, Modern Packaging.

Situations Wanted

DISTRICT MANAGER—SALES REPRESENTATIVE—Available for Indiana, Kentucky, Ohio territory. Over 15 yrs sales experience in flexible and rigid packaging including all methods of printing. Interested in connection with medium to large manufacturer of glass, plastics, cartons, or films, foils, or paper packaging. Reply to Box 1276, Modern Packaging.

SALES MANAGER—20 years broad experience in packaging & plastics fields—injection, compression, transfer, & blow molding—aerosol pressure packaging. Will also consider manufacturers' representative opportunity. Florida and/or Southeast area only. Reply Box 1277, Modern Packaging.

RESPONSIBLE OPPORTUNITY WANTED in South or Southeast in packaging or allied field. Experienced flexible packaging sales with capability such as paper, paperboard products, etc. Intelligent, self-starter, Age 41. References. Box 1278, Modern Packaging.

ALL AROUND PACKAGING MAN, especially experienced in Food Packaging. Mechanic, Set-up-Man and Salesman of Packing, Filling and Weighing Machines seeks new challenging position. Has international experience of 10 years, in Europe and South America. Age 30 years old, married, speaks following languages: German, Italian, Portuguese and Spanish. Willing to work any place, including foreign countries. Reply Box 1285, Modern Packaging.

Miscellaneous

TRANSPARENT PACKAGING-CONVERTING PLANT, operating 24 hrs. a day, multicolor printing and bag-making, cellophane and polyethylene, located in desirable, fast, expanding area, market of a million and a half in polyethylene, plus cellophane—no local competition, modern equipment, quarter-million volume. Owner will deal with principals only. Forced to sell because of owner's health. $95,000.00 includes active customers, personnel and raw materials inventory—terms can be arranged. Reply Box 1279, Modern Packaging.

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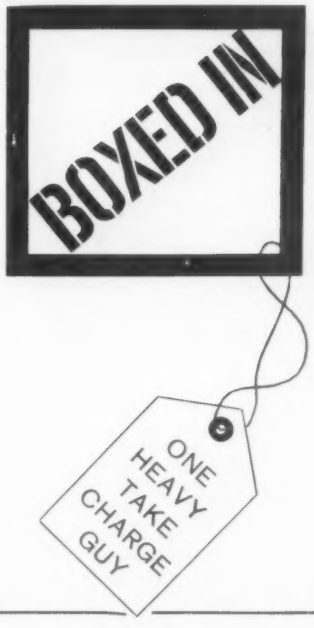
We are looking for an Executive Vice-President with extensive sales experience, and who probably has some following in the contract packaging field. Experience should encompass bubble packaging and 'skin' packaging, but is not necessarily limited to these areas. In addition, the man we want will have to possess a combination of talents and abilities. He should have creative imagination, not so much in details, but towards sales-building resourcefulness. For this would provide the mainspring to his sense of direction. He will be an active thinker and organizer, with work of his own to do—apart from giving direction to others.

He may be volatile, but also a solid citizen, with both feet on the ground. Have sufficient personal magnetism and charm as to be of asset to his work—but for his purposes, and ours, he cannot be a counterpart of the storied Madison Avenue charm-merchant. Here, he will be—more than he has been, the king-pin of the whole operation. He will be given full rein due a 'first-string' quarterback, for an entire team—capable of running his own show! Not 'boxed-in' nor hide-bound by top-heavy, over systematized policy and management machinery. To men who know their business, the symposium of these ingredients add up to one simple qualification; we want a 'take-charge guy'.



To such a man who is interested in considering a change, we are prepared to offer him a substantial 5 figure salary, with stock options, and of course, depending largely upon himself, there is virtually a limitless horizon on income based on the optimum potential which exists here.

We are a small company doing an annual volume in the million dollar area in contract packaging. A number of our accounts are 'blue chip'. All replies will be regarded with and held in strictest confidence. **Write to Box #1284, Modern Packaging, 575 Madison Ave., New York 22, N.Y.**

The *Labelmatic* **Automatic Labeler**

For fast, efficient labeling

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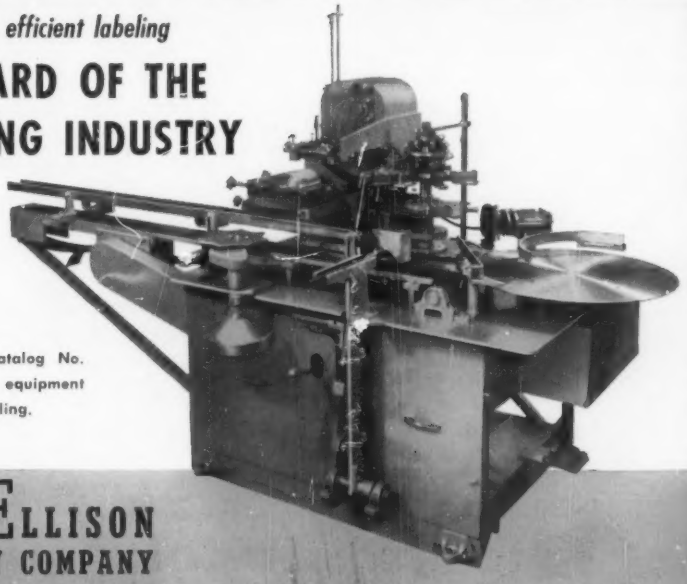

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- DUPLEX unit labels 100-110 per minute up to 3" diameter container size.
- Front and Back and Neck Labeling Models available.
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- Positive bottle feed.
- Variable Speed.

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A BRESKIN PUBLICATION

Published by Modern Packaging Corp., 575 Madison Avenue, New York 22, N.Y.

The wide range of properties available in Eastman's series of low-molecular-weight polyethylene resins provides formulating flexibility never before possible. With the addition of three new resins (Epolene LVE, HDE and HD), formulators and coaters of paraffin waxes can now choose from among seven different types to achieve that combination of properties which best meets the requirements of the paper and packaging industries.

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- increases toughness
- increases abrasion resistance
- improves adhesion
- improves resistance to thermal shock
- increases mileage
- raises blocking temperature
- improves gloss

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Epolene LVE *oxidized* • When good adhesion and a low cloud point are important, Epolene LVE should be considered as a component in paraffin blends.

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Eastman now offers formulators and converters 7 basic types of polyethylene

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(130° AMP Paraffin)

PROPERTY	EPOLENE TYPE						
	E	LVE	HDE	N	LV	HD	C
Density *	0.938	0.939	0.956	0.928	0.925	0.938	0.907
Viscosity, cps.	4.8	5.5	5	5.2	4.3	5.4	5.2
Ring and Ball Softening Point, °F.	145	138	140	140	140	145	139
Penetration Hardness, 0.1mm.	15	11	11.5	15.6	13.9	13.9	13.3
Adhesion, Psi.	13.5	13.5	11	8	8.5	5.5	10.5
Cloud Point, °F.	174	165	183	185	176	190	170
Consumption, G./100 in.²	3.79	4.49	3.29	3.69	3.86	4.71	4.32
Tensile, Psi.	455	435	280	470	465	355	470

*Density of unblended Epolene

Epolene®

EASTMAN low-molecular-weight polyethylene resins

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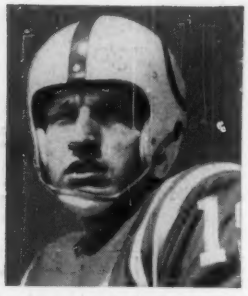

Johnny Unitas, all-pro quarterback, throws fast, hard and straight. We asked Johnny to help us demonstrate the strength and resilience of Expanda-Kraft. He had two targets: regular multiwall kraft and Expanda-Kraft. Each target had four plies of 50-lb. stock. The speeding pigskin ripped through regular kraft, but time after time it bounced off Expanda-Kraft. The picture shows where the ball left dents in the Expanda-Kraft.

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